IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent of:	Fortune et al.	Attorney Docket No.: 15625-0020IP1
U.S. Patent No.:	6,012,007	
Issue Date:	January 4, 2000	
Appl. Serial No.:	08/868,338	
Filing Date:	June 3, 1997	
Title:	OCCUPANT DETECTION METHOD AND APPARATUS FOR AIR BAG SYSTEMS	

DECLARATION OF DR. KIRSTEN CARR

I, Kirsten Carr, of Ann Arbor, Michigan, declare that:

1. I have attached my curriculum vitae as Exhibit 1 to this report. I have summarized my educational and professional background below.

2. I received my B.S. degree in Mechanical Engineering from the University of Michigan, Ann Arbor, in 1987 and my M.S. and Ph.D. in Mechanical Engineering from the University of Illinois, Urbana, in 1990 and 1995, respectively.

3. I joined Ford Motor Company in 1992, working a variety of assignments, including manufacturing research, powertrain quality, occupant safety research, and advance safety sensors. My work in advance safety sensors (2000-2004) included front impact, side impact, rollover, pre-crash, and occupant classification sensor systems. Among other tasks, I was responsible for evaluating occupant classification sensor technologies at various stages of development and delivering

sensor systems capable of meeting the new FMVSS regulations with proven implementation readiness to vehicle programs.

4. I join Packer Engineering in 2006 as an expert in mechanical and manufacturing engineering with expertise in forensic analysis of mechanical components, vehicular accidents, industrial equipment, vehicle safety restraint and seat systems, and electromechanical systems. I was responsible for managing and performing mechanical and manufacturing engineering investigations and analyses for legal, insurance, and industrial firms.

5. I created Carr Analysis, LLC in 2011, where I am the President and Principal Consultant and continuing my consulting work.

6. I have been awarded ten (10) patents in the area of vehicle safety systems.

7. My other achievement (publications, presentations, reports, and lectures) are listed on my curriculum vitae.

8. I am a professional engineer registered in the State of Michigan.

9. In writing this Declaration, I have considered the following: my own knowledge and experience, including my work experience in the fields of vehicle safety systems; my industry experience with those subjects; and my experience in working with others involved in those fields. In addition, I have analyzed the following publications and materials, in addition to other materials I cite in my declaration:

- U.S. Patent No. 6,012,007 and its accompanying prosecution history ("the '007 Patent", Ex 1001)
- U.S. Patent No. 5,474,327 ("Schousek", Ex. 1004)
- U.S. Patent No. 5,232,243 ("Blackburn", Ex. 1005)

10. Although for the sake of brevity this Declaration refers to selected portions of the cited references, it should be understood that one of ordinary skill in the art would view the references cited herein in their entirety, and in combination with other references cited herein or cited within the references themselves. The references used in this Declaration, therefore, should be viewed as being incorporated herein in their entirety.

11. I am not currently and have not at any time in the past been an employee of American Honda Motor Co., Inc. I have been engaged in the present matter to provide my independent analysis of the issues raised in the petition for *inter partes* review of the '007 patent. I received no compensation for this declaration beyond my normal hourly compensation based on my time actually spent studying the matter, and I will not receive any added compensation based on the outcome of this *inter partes* review of the '007 patent.

I. Person of Ordinary Skill in the Art

12. I am familiar with the content of the '007 patent, which, I have been informed by counsel, has an earliest possible filing date of December 1, 1995

(hereinafter "the Critical Date"). Additionally, I have reviewed the other references cited above in this declaration. Counsel has informed me that I should consider these materials through the lens of one of ordinary skill in the art related to the '007 patent at the time of the invention. I believe one of ordinary skill around December 1, 1995 would have had a Bachelor of Science in Mechanical Engineering with experience in computer programming and several years of experience in vehicle safety systems or the like. Alternatively, this individual could have a Bachelor of Science Degree in Electrical Engineering, Computer Engineering, or Computer Science with experience in the mechanical arts in addition to the experience described above. Individuals with additional education or additional industrial experience could still be of ordinary skill in the art if that additional aspect compensates for a deficit in one of the other aspects of the requirements stated above. I base my evaluation of a person of ordinary skill in this art on my own personal experience, including my knowledge of students, colleagues, and related professionals at the time of interest.

13. My findings, as explained below, are based on my education, experience, and background over the last 30 years as discussed above.

II. Claim Construction

14. I understand that, for the purposes of my analysis in this matter, the claims of the '007 Patent must be given their broadest reasonable interpretation consistent

with the specification. Stated another way, it is contemplated that the claims are understood by their plain and ordinary meanings except where construed in the specification. I also understand that this "plain and ordinary meaning" is with respect to how one of ordinary skill in the art would interpret the claim language. I have followed these principles in my analysis. In a few instances, I have discussed my understanding of the claims in the relevant paragraphs below.

III. Schousek

15. Schousek teaches a vehicle restraint system having a controller for deploying air bags that selectively allows deployment according to the outputs of seat sensors responding to the weight of an occupant. Schousek describes an "air bag restraint system [that] is equipped with [a] seat occupant sensing apparatus for a passenger seat which detects both infant seats and adults and distinguishes between and forward facing infant seats." Ex. 1004, Abstract. Schousek states that "the sensing apparatus comprises eight variable resistance pressure sensors in the seat cushion." *Id.* A "microprocessor" monitors "the response of each sensor to occupant pressure," and calculates a "total weight and weight distribution" for an occupant of the seat. *Id.* Schousek describes that the detected weight from the seat sensors "is used to discriminate between an occupied infant seat, an adult and no occupant," and that the "weight distribution is used to distinguish between forward and rear facing infant seats." *Id.*

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