

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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COSTCO WHOLESALE CORPORATION,  
Petitioner,

v.

ROBERT BOSCH LLC,  
Patent Owner.

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**DECLARATION OF DR. STEVEN DUBOWSKY REGARDING  
U.S. PATENT NOS. 6,973,698; 6,944,905;  
6,292,974; 7,228,588; 7,484,264; AND 8,099,823**

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I, Steven Dubowsky, hereby declare as follows:

1. I have been retained by Patent Owner Robert Bosch LLC (“Patent Owner” or “Bosch”) in connection with *inter partes* review (“IPR”) proceedings brought by Costco Wholesale Corporation (“Costco” or “Petitioner”), specifically Case Nos. IPR2016-00034; IPR2016-00036; IPR2016-00038; IPR2016-00039; IPR2016-00040; and IPR2016-00041. These IPRs involve, respectively, U.S. Patent Nos. 6,973,698 (“the ’698 patent”); 6,944,905 (“the ’905 patent”); 6,292,974 (“the ’974 patent”); 7,228,588 (“the ’588 patent”); 7,484,264 (“the ’264 patent”); and 8,099,823 (“the ’823 patent”) (collectively, the “Bosch patents”). I submit this declaration in support of Bosch’s responses in these IPR proceedings. I have personal knowledge of the matters stated herein and would be competent to testify to them if required.

2. Bosch’s counsel has informed me that the following chart sets forth the “grounds,” or how the Patent Trial and Appeal Board (“the Board”) has preliminarily found various claims of the Bosch patents unpatentable over the prior art:

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IPR No.	Pat. No.	Claims	Grounds
IPR2016-00034	6,973,698	1	<b>OBVIOUSNESS:</b> prior art is USP 4,807,326 (“Arai ’326”) and USP 4,028,770 (“Appel ’770”)
			<b>ANTICIPATION:</b> prior art is USP 5,325,564 (“Swanepoel ’564”)
IPR2016-00036	6,944,905	13, 17, 18	<b>OBVIOUSNESS:</b> prior art is GB 2,106,775 (“Prohaska ’775”) and DE 1,028,896 (“Hoyler ’896”)
IPR2016-00038	6,292,974	1, 2, 8	<b>OBVIOUSNESS:</b> prior art is USP 3,192,551 (“Appel ’551”) and Prohaska ’775
			<b>OBVIOUSNESS:</b> prior art is Hoyler ’896 and Prohaska ’775
IPR2016-00039	7,228,588	1, 12, 14	<b>OBVIOUSNESS:</b> prior art is PCT WO 99/02383 (“Kotlarski ’383”) and Prohaska ’775
			<b>OBVIOUSNESS:</b> prior art is PCT WO 99/12784 (“Merkel ’784”) and Prohaska ’775
IPR2016-00040	7,484,264	1, 2, 3	<b>OBVIOUSNESS:</b> for claims 1 and 2, prior art is Prohaska ’775 and either Kotlarski ’383 or Merkel ’784
			<b>OBVIOUSNESS:</b> for claim 3, prior art is (i) Prohaska ’775 and (ii) either Kotlarski ’383 or Merkel ’784 and (iii) either PCT WO 00/34090 (“Kotlarski ’090”) or USP 3,121,133 (“Mathues ’133”)
IPR2016-00041	8,099,823	1, 6, 9, 10	<b>OBVIOUSNESS:</b> for claims 1, 9, and 10, prior art is Prohaska ’775 and one of Appel ’551, Hoyler ’896, Merkel ’784, or Kotlarski ’383
			<b>OBVIOUSNESS:</b> for claim 6, prior art is (i) Prohaska ’775 and (ii) one of Appel ’551, Hoyler ’896, Merkel ’784, or Kotlarski ’383 and (iii) either Kotlarski ’090 or Mathues ’133

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3. I have reviewed and am familiar with the Bosch patents, including their specifications. I have also reviewed and am familiar with the prior art in the chart directly above.

4. I have been asked to provide my technical review, analysis, insights, and opinions regarding the Bosch patents in view of the prior art cited in the table above.

## **I. QUALIFICATIONS**

5. I am Professor Emeritus in the Department of Mechanical Engineering and in the Department of Aeronautics and Astronautics at the Massachusetts Institute of Technology.

6. I was previously the Director of the MIT Mechanical Engineering Field and Space Robotics Laboratory, the Head of the Systems and Design Division of the Mechanical Engineering Department, and have also served as the Associate Head of the MIT Interdepartmental Laboratory for Manufacturing and Productivity. I hold several engineering degrees, including a doctorate in Engineering Science from Columbia University. I am an active researcher with over 350 publications in the area of mechanical and electromechanical systems

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design and analysis. The focus of my work is on advancing design methods and control systems for complex mechanical and electromechanical systems.

7. I have many years of industry experience. For a time I worked at Electric Boat Division of the General Dynamics Corporation on nuclear submarines, and then I was employed for about eight years as a Senior Engineer with the Perkin-Elmer Corporation, where I worked in the design and analysis of complex mechanisms, electromechanical and electro-optical systems used in precision, high-speed optical systems and devices.

8. I worked on many projects consulting for industry and government over the years. For example, in or around 2000 I worked at MIT on an industrial project for Foster-Miller Corporation that involved design and development of systems to assemble weapons automatically on aircraft carriers. From 2002 to 2005 I worked with U.S. governmental agencies, including National Aeronautics and Space Administration (NASA) and Defense Advanced Research Projects Agency (DARPA), doing research in automotive systems. We collaborated with and were also funded by U.S. Army's Tank-automotive and Armaments Command Research Laboratory and Army Research Office. I also worked on a project related to automotive systems and control systems that was supported by Ford

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