

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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APPLE INC. and FITBIT, INC.  
Petitioners

v.

VALENCELL, INC.  
Patent Owner

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Case IPR2017-00317<sup>1</sup>  
Patent 8,989,830

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**PETITIONER APPLE INC'S OPPOSITION TO PATENT OWNER'S  
MOTION TO AMEND**

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<sup>1</sup> IPR2017-01553 has been joined to this current proceeding.

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1.	The combination of Goodman, Han, Hannula, and Asada teaches or suggests “a light reflective material on at least a portion of one or both of the inner and outer surfaces of the [inner/first] layer” .....	20
2.	The combination of Goodman, Han, Hannula, and Asada teaches or suggests that “the at least one optical detector comprises first and second optical detectors” .....	20
3.	The combination of Goodman, Han, Hannula, and Asada discloses that “a signal processor, and wherein at least a portion of light reflected by the second optical detector is	

processed by the signal processor as a motion noise  
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**PETITIONER’S UPDATED EXHIBIT LIST**

<b><i>Apple (APL) Ex. No.</i></b>	<b><i>Description</i></b>
<b>1001</b>	U.S. Patent No. 8,989,830 to LeBoeuf <i>et al.</i> titled “Wearable Light-Guiding Devices for Physiological Monitoring,” issued March 24, 2015
<b>1002</b>	U.S. Patent No. 8,989,830 File History
<b>1003</b>	Declaration of Dr. Brian W. Anthony in Support of Petition for <i>Inter Partes</i> Review of U.S. Patent No. 8,989,830
<b>1004</b>	<i>Curriculum Vitae</i> of Dr. Brian W. Anthony
<b>1005</b>	Asada, H. <i>et al.</i> “Mobile Monitoring with Wearable Photoplethysmographic Biosensors,” IEEE Engineering in Medicine and Biology Magazine, May/June 2003; pp. 28-40
<b>1006</b>	U.S. Patent No. 5,226,417 to Swedlow <i>et al.</i> titled “Apparatus for the Detection of Motion Transients,” issued July 13, 1993
<b>1007</b>	U.S. Patent No. 4,830,014 to Goodman <i>et al.</i> titled “Sensor Having Cutaneous Conformance,” issued May 16, 1989
<b>1008</b>	U.S. Patent No. 6,745,061 to Hicks <i>et al.</i> titled “Disposable Oximetry Sensor,” issued June 1, 2004
<b>1009</b>	U.S. Patent No. 7,190,986 to Hannula <i>et al.</i> titled “Non-Adhesive Oximeter Sensor for Sensitive Skin,” issued March 13, 2007
<b>1010</b>	U.S. Patent No. 5,797,841 to Delonzor <i>et al.</i> titled “Shunt Barrier in Pulse Oximeter Sensor,” issued August 25, 1998
<b>1011</b>	U.S. Patent Application Publication No. 2007/0123763 to Al-Ali <i>et al.</i> titled “Optical Sensor Including Disposable and Reusable Elements,” published May 31, 2007
<b>1012</b>	Excerpt from Merriam Webster’s Collegiate Dictionary, Eleventh Edition, 2008; p. 828
<b>1013</b>	Mendelson, Y. <i>et al.</i> , “Skin Reflectance Pulse Oximetry: In Vivo Measurements from the Forearm and Calf,” Journal of Clinical Monitoring, Vol. 7, No. 1, January 1991; pp. 7-12
<b>1014</b>	Konig, V. <i>et al.</i> , “Reflectance Pulse Oximetry – Principles and Obstetric Application in the Zurich System,” Journal of Clinical Monitoring and Computing, Vol. 14, No. 6, August 1998; pp. 403-412

<i>Apple (APL) Ex. No.</i>	<i>Description</i>
<b>1015</b>	Mendelson, Y. <i>et al.</i> "A Wearable Reflectance Pulse Oximeter for Remote Physiological Monitoring," Proceedings of the 28 <sup>th</sup> IEEE EMBS Annual International Conference, New York City, New York, August 30-September 3, 2006; pp. 912-915
<b>1016</b>	U.S. Patent No. 6,608,562 to Kimura <i>et al.</i> titled "Vital Signal Detecting Apparatus," issued August 19, 2003
<b>1017</b>	Tremper, K. <i>et al.</i> , "Pulse Oximetry," Medical Intelligence Article, Anesthesiology, Vol. 70, No. 1, January 1989; pp. 98-108
<b>1018</b>	Declaration of Gerard P. Grenier in support of Asada, H. <i>et al.</i> "Mobile Monitoring with Wearable Photoplethysmographic Biosensors," IEEE Engineering in Medicine and Biology Magazine, May/June 2003; pp. 28-40 (APL1005)
<b>1019</b>	<i>Intentionally Left Blank</i>
<b>1020</b>	<i>Intentionally Left Blank</i>
<b>1021</b>	<i>Intentionally Left Blank</i>
<b>1022</b>	Transcript of teleconference among Board and Parties held on October 13, 2017, <i>Apple Inc. v. Valencell, Inc.</i> , Case Nos. IPR2017-00315, IPR2017-00317, IPR2017-00318, IPR2017-00319, and IPR2017-00321.
<b>1023-1099</b>	<i>Intentionally Left Blank</i>
<b>1100</b>	Transcript of the Deposition of Dr. Albert Titus, November 9, 2017, <i>Apple Inc. v. Valencell, Inc.</i> , Case No. IPR2017-00318.
<b>1101</b>	Transcript of the Deposition of Dr. Albert Titus, November 10, 2017, <i>Apple Inc. v. Valencell, Inc.</i> , Case No. IPR2017-00317.
<b>1102</b>	Declaration of Dr. Brian W. Anthony in Support of Reply for <i>Inter Partes</i> Review of U.S. Patent No. 8,989,830
<b>1103</b>	Declaration of Dr. Brian W. Anthony in Support of Petitioner's Opposition to Patent Owner's Motion to Amend in <i>Inter Partes</i> Review of U.S. Patent No. 8,989,830
<b>1104</b>	Hyonyoung Han <i>et al.</i> , <i>Development of a wearable health monitoring device with motion artifact reduced algorithm</i> , International Conference on Control, Automation and Systems, IEEE (2007)
<b>1105</b>	Declaration of Gerard P Grenier in support of Hyonyoung Han <i>et al.</i> , <i>Development of a wearable health monitoring device with motion artifact reduced algorithm</i> , International Conference on Control, Automation and Systems, IEEE (2007)

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