

Filed on behalf of Valencell, Inc.

By: Justin B. Kimble (JKimble-IPR@bcpc-law.com)  
Jeffrey R. Bragalone (jbragalone@bcpc-law.com)  
T. William Kennedy Jr. (bkennedy@bcpc-law.com)  
Marcus Benavides (mbenavides@bcpc-law.com)  
Bragalone Conroy PC  
2200 Ross Ave.  
Suite 4500 – West  
Dallas, TX 75201  
Tel: 214.785.6670  
Fax: 214.786.6680

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE PATENT TRIAL AND APPEAL BOARD

---

APPLE INC.,  
Petitioner,

v.

VALENCELL, INC.,  
Patent Owner.

---

Case IPR2017-00317  
U.S. Patent No. 8,989,830

---

**PATENT OWNER RESPONSE PURSUANT TO  
35 U.S.C. § 313 and 37 C.F.R. § 42.107**

Mail Stop PATENT BOARD  
Patent Trial and Appeal Board  
U.S. Patent & Trademark Office  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

## TABLE OF CONTENTS

I.	Introduction.....	6
II.	Overview of the '830 Patent.....	9
	A. Description of Embodiments .....	9
	B. Level of Ordinary Skill in the Art.....	16
	C. Exemplary Claim .....	17
	D. Priority Date of the '830 Patent Claims.....	18
III.	Summary of Certain Prior Art .....	19
	A. Goodman.....	19
	B. Asada.....	21
IV.	Claim Construction.....	23
	A. "Cladding Material" .....	23
	B. "Near" .....	27
	C. "Light Guiding Interface" .....	27
V.	Argument .....	30
	A. Ground 1: Single-reference Obviousness using Goodman – Claims 1-4 and 11-14.....	30
	1. Goodman Does Not Teach or Suggest a "window formed in the layer of cladding material that serves as a light-guiding interface to the body of the subject" .....	31

2. Goodman does not disclose that “the first and second directions are substantially parallel” .....	35
3. Goodman does not teach or suggest that the “light transmissive material is configured” to meet the “first and second directions” limitations.....	40
B. Ground 2: Goodman in view of Hicks – Claims 5 and 15.....	41
C. Grounds 3: Goodman in view of Hannula and further in view of Asada – Claims 6 and 16.....	48
1. Considering Goodman, Hannula, and Asada as a Whole, a POSA Would not Have Combined Them .....	49
2. Petitioner’s Premise for Combining Goodman and Hannula is Faulty .....	54
3. Petitioner’s Premises for Combining Goodman and Asada are Faulty .....	57
4. Claims 6 and 16 – Missing Limitations from Goodman .....	60
D. Ground 4: Goodman in view of Asada – Claims 8, 9, 18, and 19.....	64
E. Ground 5: Goodman in view of Delonzor – Claims 10 and 20.....	66
VI. The Arguments Apply across the Grounds.....	67
VII. Patent Owner Does Not Consent to the PTAB Adjudicating the Patentability or Validity of the ’830 patent .....	67

VIII. Conclusion.....67

## TABLE OF EXHIBITS

Exhibit No.	Description
2001	S. LeBoeuf, et al., Earbud-Based Sensor for the Assessment of Energy Expenditure, HR, and VO2max, OFFICIAL J. AM. C. SPORTS M., 2014, 1046–1052
2002	Biometrics Lab: Performance of Leading Optical Heart Rate Monitors During Interval Exercise Conditions
2003	Valencell website ( <a href="http://valencell.com/customers/">http://valencell.com/customers/</a> )
2004	CTA - It Is Innovation (i3) Magazine 2016 Innovation-Entrepreneur Awards
2005	Webster's Third New International Dictionary, Unabridged (2002) (excerpt)
2006	Declaration of T. William Kennedy (August 3, 2017)
2007	Declaration of Albert H. Titus in Support of Patent Owner's Response to Petition (September 22, 2017)
2008	<i>Curriculum Vitae</i> of Albert H. Titus
2009	Deposition Transcript of Dr. Brian W. Anthony (September 13, 2017)
2010	Deposition Transcript of Dr. Brian W. Anthony (September 15, 2017)
2011	Mendelson, et al., Noninvasive Pulse Oximetry Utilizing Skin Reflectance Photoplethysmography, IEEE Transactions on Biomedical Engineering, Vol. 35, No. 10, October 1988
2012	Pujary, et al., Photodetector Size Considerations in the Design of a Noninvasive Reflectance Pulse Oximeter for Telemedicine Applications, IEEE, 2003
2013	New Oxford American Dictionary, 2d Ed. (2005) (excerpt)

# Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

## Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

## Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

## Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

## API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

## LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

## FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

## E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.