

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.,  
Petitioner,

v.

VALENCELL, INC.  
Patent Owner.

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IPR2017-00317<sup>1</sup>  
Patent 8,989,830 B2

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Before BRIAN J. McNAMARA, JAMES B. ARPIN, and  
SHEILA F. McSHANE, *Administrative Patent Judges*.

McSHANE, *Administrative Patent Judge*.

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

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<sup>1</sup>*Fitbit, Inc. v. Valencell, Inc.*, Case IPR2017-01553, has been joined with this proceeding.

## I. INTRODUCTION

### A. Background

Apple Inc. (“Petitioner”) filed a Petition requesting *inter partes* review of claims 1–6, 8–16, and 18–20 (“the challenged claims”) of U.S. Patent No. 8,989,830 B2 (Ex. 1001, “the ’830 patent”) pursuant to 35 U.S.C. §§ 311–319. Paper 2 (“Pet.”). *Fitbit, Inc. v. Valencell, Inc.*, Case IPR2017-01553, has been joined with this proceeding. Paper 26, 5–6. Valencell, Inc. (“Patent Owner”) filed a Preliminary Response to the Petition. Paper 6 (“Prelim. Resp.”). Pursuant to 35 U.S.C. § 314, we instituted an *inter partes* review as to claims 1–6, 8–16, and 18–20 (“the challenged claims”) of the ’830 patent on June 5, 2017 on all the asserted grounds, which are:

Basis	Claims	Reference(s)
§ 103	1–4, 11–14	Goodman <sup>2</sup>
§ 103	5, 15	Goodman and Hicks <sup>3</sup>
§ 103	6, 16	Goodman, Hannula <sup>4</sup> , and Asada <sup>5</sup>
§ 103	8, 9, 18, 19	Goodman and Asada
§ 103	10, 20	Goodman and Delonzor <sup>6</sup>

Paper 7 (“Dec.” or “Institution Decision”).

<sup>2</sup> U.S. Patent No. 4,830,014 (issued May 16, 1989) (Ex. 1007).

<sup>3</sup> U.S. Patent No. 6,745,061 B1 (issued June 1, 2004) (Ex. 1008).

<sup>4</sup> U.S. Patent No. 7,190,986 B1 (issued March 13, 2007) (Ex. 1009).

<sup>5</sup> H. Harry Asada, *Mobile Monitoring with Wearable Photoplethysmographic Biosensors*, IEEE ENGINEERING IN MEDICINE AND BIOLOGY MAGAZINE, 22:3, 28–40, May-June 2003. (Ex. 1005).

<sup>6</sup> U.S. Patent No. 5,797,841 (issued August 25, 1998) (Ex. 1010).

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During the course of trial, Patent Owner filed a Response (Paper 19, “PO Resp.”), and Petitioner filed a Reply to the Patent Owner Response (Paper 27, “Pet. Reply”). Petitioner submitted the Declaration of Brian W. Anthony, Ph.D. (Ex. 1003) and the Declaration of Brian W. Anthony, Ph.D. in Support of Petitioner’s Reply (Ex. 1102). Patent Owner submitted the Declaration of Albert H. Titus, Ph.D. (Ex. 2007).

Patent Owner filed a Motion for Observations on the cross-examination of Dr. Anthony (Paper 37), and Petitioner filed a response thereto (Paper 39). Patent Owner additionally alleged that certain of Petitioner’s arguments exceed the proper scope of Petitioner’s Reply. *See* Ex. 1110.

In addition, Patent Owner filed a Motion to Amend (Paper 20, “Mot.”), which was opposed by Petitioner (Paper 28, “Opp.”). Patent Owner submitted a Reply in Support of its Motion to Amend (Paper 32, “PO Reply”), and Petitioner filed a Sur-Reply supporting its Opposition (Paper 34, “Sur-Reply”). In support of the Motion to Amend, Patent Owner submitted the Declaration of Dr. Titus (Ex. 2110), as well as the Supplemental Declaration of Dr. Titus (Ex. 2151). Petitioner submitted the Declaration of Dr. Anthony in support of Opposition (Ex. 1103), and the Supplemental Declaration of Dr. Anthony in support of Sur-Reply (Ex. 1111).

We held a consolidated oral hearing on February 27, 2018, in relation to this proceeding and that of Case IPR2017-00318. A transcript (Paper 45, “Tr.”) of the oral hearing has been entered into the record.

We have jurisdiction to hear this *inter partes* review under 35 U.S.C. § 6, and this Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons that follow, we determine that

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Petitioner has shown by a preponderance of the evidence that claims 1–6, 8–16, and 18–20 of the ’830 patent are unpatentable. Additionally, we deny Patent Owner’s Motion to Amend.

### *B. Related Proceedings*

The parties indicated that the ’830 patent is at issue in *Valencell, Inc. v. Apple Inc.*, Case No. 5:16-cv-00001 (E.D.N.C), and *Valencell, Inc. v. Fitbit, Inc.*, Case No. 5:16-cv-00002 (E.D.N.C). Pet. 3; Paper 5, 1. Patent Owner indicated the ’830 patent is also at issue in *Valencell, Inc. v. Bragi Store, LLC*, Case No. 5:16-cv-00895 (E.D.N.C.). Paper 5, 1.

In addition to this Petition, Petitioner indicated that it filed another *inter partes* review petition challenging claims of the ’830 patent (IPR2017-00316), wherein institution of *inter partes* review was denied, and also filed another *inter partes* review petition (IPR2017-00318), in which *inter partes* review was instituted, challenging claims of U.S. Patent No. 8,886,269 B2, which is the parent of the ’830 patent. Pet. 3; *see also Apple Inc. v. Valencell, Inc.*, Case IPR2017-00316, (PTAB June 5, 2017) (Paper 7); *Apple Inc. v. Valencell, Inc.*, Case IPR2017-00318, (PTAB June 5, 2017) (Paper 7).

### *C. The ’830 Patent*

The ’830 patent is entitled “Wearable Light-Guiding Devices For Physiological Monitoring” and issued on March 24, 2015 from an application filed on September 12, 2014. Ex. 1001, [22], [45], [54]. The ’830 patent claims priority to U.S. Patent Application No. 14/184,364, filed on February 19, 2014 (now U.S. Patent No. 8,886,269 B2), and U.S. Patent Application No. 12/691,388, filed on January 21, 2010 (now U.S. Patent 8,700,111). *Id.* at [63].

The '830 patent is directed to monitoring devices configured to be attached to the body of a subject. Ex. 1001, Abstract. The monitoring devices may include physiological sensors to measure, for example, heart rate, pulse rate, breathing rate, and a variety of other physical parameters. *Id.* at 4:33–67. The sensors, for example, may be photoplethysmography (“PPG”) sensors for measuring blood flow properties, such as blood oxygen level. *Id.* at 3:67–4:5. The '830 patent discloses various embodiments of the monitoring devices, such as that depicted in Figures 22A and 22B, reproduced below.

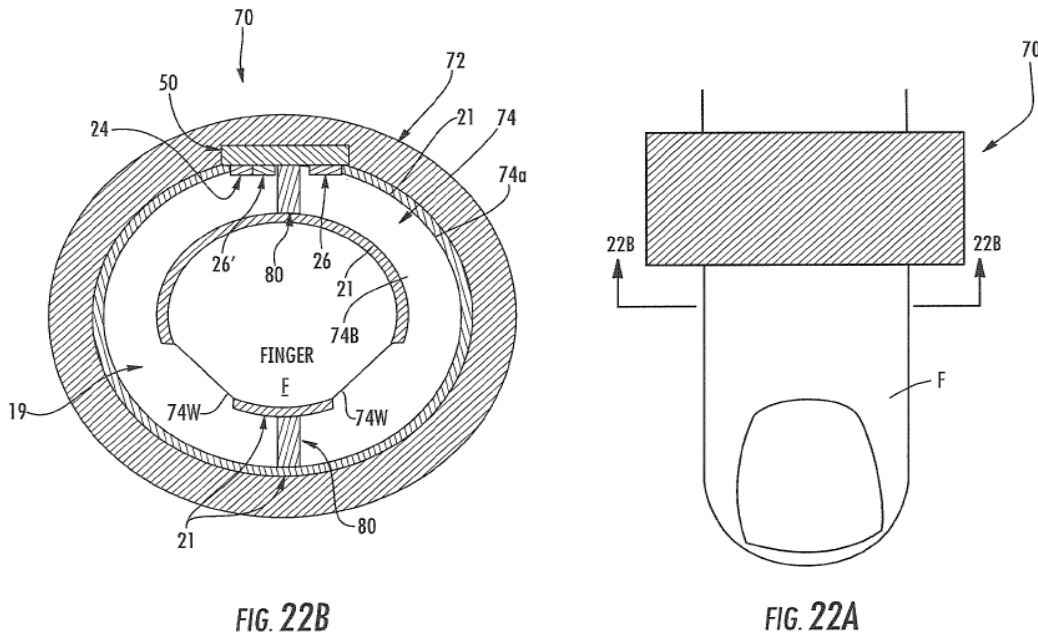


Figure 22A is a top plan of an embodiment of monitoring device 70 configured to be attached to the finger of a subject, and Figure 22B is a cross-sectional view of the monitoring device. Ex. 1001, 8:16–20. The monitoring device that fits over the finger has outer body portion 72 that may include a flex circuit, and base 50 secured to inner body portion 74 and outer body portion 72. *Id.* at 28:1–10. Base 50 supports optical emitter 24, optical detector 26, and optical noise detector 26'. *Id.* at 28:19–21. Layer of

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