

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent of: Poeze et al.
U.S. Patent No.: 10,709,366 Attorney Docket No.: 50095-0027IP1
Issue Date: July 14, 2020
Appl. Serial No.: 16/829,510
Filing Date: Mar. 25, 2020
Title: MULTI-STREAM DATA COLLECTION SYSTEM FOR
NONINVASIVE MEASUREMENT OF BLOOD
CONSTITUENTS

SECOND DECLARATION OF DR. THOMAS W. KENNY

I hereby declare that all statements made of my own knowledge are true and that all statements made on information and belief are believed to be true. I further declare that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of the Title 18 of the United States Code.

Dated: November 10, 2021

By:  _____

Thomas W. Kenny, Ph.D.

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I. Introduction

1. I have been retained on behalf of Apple Inc. to offer technical opinions relating to U.S. Patent No. 10,709,366 (“the ’366 Patent”) in the present case (IPR2020-01737). In this Second Declaration, I provide opinions related to Patent Owner’s Response (Paper 15) and Dr. Madiseti’s supporting declaration (Ex. 2004).

2. In addition to the materials listed in my First Declaration (APPLE-1003), I have reviewed several additional documents and references including:

- Paper 7: Institution Decision;
- Paper 15: Patent Owner’s Response (“POR”);
- Ex. 2004: Declaration of Dr. Madiseti;
- Ex. 2006-2009: Transcripts of my prior depositions;
- APPLE-1061: Eugene Hecht, Optics (2nd Ed. 1990);
- APPLE-1062: Eugene Hecht, Optics (4th Ed. 2002);
- APPLE-1063: Design of Pulse Oximeters, J.G. Webster; Institution of Physics Publishing, 1997 (“Webster”);
- APPLE-1053: Deposition Transcript of Dr. Vijay Madiseti in IPR2020-01536, IPR2020-01538 (August 3, 2021);
- APPLE-1054: Deposition Transcript of Dr. Vijay Madiseti in IPR2020-01520, IPR2020-01537, IPR2020-01539, Day 1 (August 1, 2021);
- APPLE-1056: Deposition Transcript of Dr. Vijay Madiseti in IPR2020-01520, IPR2020-01537, IPR2020-01539, Day 2 (August 2, 2021);

- APPLE-1057: “Refractive Indices of Human Skin Tissues at Eight Wavelengths and Estimated Dispersion Relations between 300 and 1600 nm,” H. Ding, et al.; Phys. Med. Biol. 51 (2006); pp. 1479-1489 (“Ding”);
- APPLE-1058: “Analysis of the Dispersion of Optical Plastic Materials,” S. Kasarova, et al.; Optical Materials 29 (2007); pp. 1481-1490 (“Kasarova”); and
- APPLE-1059: Deposition Transcript of Dr. Thomas W. Kenny in IPR2020-01520, IPR2020-01536, IPR2020-01537, IPR2020-01538, IPR2020-01539, Day 2 (September 18, 2021).

3. Counsel has informed me that I should consider these materials through the lens of a person of ordinary skill in the art (POSITA) related to the '366 Patent at the time of the earliest possible priority date of the '366 Patent (July 3, 2008, hereinafter the “Critical Date”) and I have done so during my review of these materials. I have applied the same level of ordinary skill in the art described in my prior declaration, which I have been informed was also adopted by the Board in the Institution Decision. APPLE-1003, [0021]-[0022]; Institution Decision, 12-13.

4. I have no financial interest in the party or in the outcome of this proceeding. I am being compensated for my work as an expert on an hourly basis. My compensation is not dependent on the outcome of these proceedings or the content of my opinions.

5. In writing this declaration, I have considered the following: my own knowledge and

experience, including my work experience in the fields of mechanical engineering, computer science, biomedical engineering, and electrical engineer; my experience in teaching those subjects; and my experience in working with others involved in those fields. In addition, I have analyzed various publications and materials, in addition to other materials I cite in my declaration.

6. My opinions, as explained below, are based on my education, experience, and expertise in the fields relating to the '366 Patent. Unless otherwise stated, my testimony below refers to the knowledge of one of ordinary skill in the fields as of the Critical Date, or before.

II. Ground 1

7. As I explained at length in my first declaration, a POSITA “would have found it obvious to modify the [Aizawa] sensor’s flat cover...to include a lens/protrusion...similar to Ohsaki’s translucent board 8, so as to [1] improve adhesion between the user’s wrist and the sensor’s surface, [2] improve detection efficiency, [3] and protect the elements within the sensor housing.” APPLE-1003, ¶¶79-84. Rather than attempting to rebut my testimony on these points, Masimo and its witness, Dr. Madisetti, responded with arguments that are technically and factually flawed.

8. Specifically, Masimo contends that “Ohsaki and Aizawa employ different sensor structures (rectangular versus circular) for different measurement locations (back side versus palm side of the wrist), using different sensor surface shapes (convex versus flat) that are tailored to those specific measurement locations” and from this concludes that “[a]

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