# UNITED STATES PATENT AND TRADEMARK OFFICE —————— BEFORE THE PATENT TRIAL AND APPEAL BOARD ——————

APPLE INC., Petitioner,

v.

COREPHOTONICS LTD., Patent Owner

<u>Declaration of José Sasián, PhD</u> <u>under 37 C.F.R. § 1.68</u>



# **TABLE OF CONTENTS**

I.	INTRODUCTION2			
II.	QUALIFICATIONS AND PROFESSIONAL EXPERIENCE4			
III.	LEVEL OF ORDINARY SKILL IN THE ART			8
IV.	RELEVANT LEGAL STANDARDS			10
	A.	Ant	icipation	10
	B.	Obv	viousness	10
V.	OVERVIEW OF THE '568 PATENT			
	A. Summary of the Patent			12
	B.	Pro	secution History of the '568 Patent	16
VI.	CLAIM CONSTRUCTION			18
	A. "Total Track Length (TTL)"			
	B.	"Ef	fective Focal Length (EFL)"	19
VII.	IDENTIFICATION OF HOW THE CLAIMS ARE UNPATENTABLE19			
III. IV.  V.  VII.  VIII.	A. Claims 1-5 are obvious over Ogino			20
		1.	Summary of Ogino	20
		2.	Detailed Analysis	26
	B.	Claims 1-5 are obvious over Ogino and Beich		51
		1.	Summary of Beich	51
		2.	Reasons to Combine Ogino and Beich	52
		3.	Detailed Analysis	56
VIII.	CONCLUSION			76
IX.	APPENDIX77			



#### I. INTRODUCTION

- 1. I am making this declaration at the request of Apple Inc. in the matter of the *inter partes* review of U.S. Patent No. 9,857,568 ("the '568 Patent") to Dror, *et al.*
- 2. I am being compensated for my work in this matter at the rate of \$525/hour. I am also being reimbursed for reasonable and customary expenses associated with my work and testimony in this investigation. My compensation is not contingent on the outcome of this matter or the specifics of my testimony.
- 3. I have been asked to provide my opinions regarding whether claims 1-5 of the '568 Patent are unpatentable, either because they are anticipated or would have been obvious to a person having ordinary skill in the art ("POSITA") at the time of the alleged invention, in light of the prior art. After a careful analysis it is my opinion that all of the limitations of claims 1-5 would have been either anticipated or obvious to a POSITA.
  - 4. In the preparation of this declaration, I have reviewed:
    - The '568 Patent, Ex.1001;
    - The prosecution history of the '568 Patent, Ex.1002;
    - U.S. Patent No. 9,128,267 to Ogino et al. ("Ogino"), Ex.1005;
    - Warren J. Smith, Modern Lens Design (1992) ("Smith"), Ex.1006;



- U.S. Patent No. 7,918,398 to Li et al. ("Li"), Ex.1007;
- U.S. Patent No. 7,777,972 to Chen et al. ("Chen"), Ex.1008;
- Max Born et al., PRINCIPLES OF OPTICS, 6<sup>th</sup> Ed. (1980) ("Born"), Ex.1010;
- Jane Bareau et al., "The optics of miniature digital camera modules," SPIE Proceedings Volume 6342, *International Optical Design Conference* 2006; 63421F (2006)
   https://doi.org/10.1117/12.692291 ("Bareau"), Ex.1012;
- U.S. Patent App. Pub. No. 2013/0077183 to An et al. ("An"),
   Ex.1017;
- Michael P. Schaub, THE DESIGN OF PLASTIC OPTICAL SYSTEMS (2009) ("Schaub"), Ex.1018;
- Optical Society of America, HANDBOOK OF OPTICS, vol. II 2nd ed.
   (1995) ("Handbook of Optics"), Ex.1019; and
- William S. Beich et al., "Polymer Optics: A manufacturer's perspective on the factors that contribute to successful programs," SPIE Proceedings Volume 7788, *Polymer Optics Design*, *Fabrication, and Materials* (August 12, 2010); https://doi.org/10.1117/12.861364 ("Beich"), Ex.1020.
- 5. In forming the opinions expressed below, I have considered:



- a) The documents listed above;
- b) My own knowledge and experience based upon my work in the fields of optics and lens designs, as described below; and
- c) The level of skill of a POSITA at the time of the alleged invention of the '568 patent.

### II. QUALIFICATIONS AND PROFESSIONAL EXPERIENCE

- 6. My complete qualifications and professional experience are described in my *Curriculum Vitae*, a copy of which can be found in Ex.1004. The following is a brief summary of my relevant qualifications and professional experience.
- 7. As shown in my *curriculum vitae* (Ex.1004), I have extensive academic and industry experience with optical engineering. Specifically, I have over thirty years of academic and industry experience in the field of optical sciences and optical engineering in general, including optical instrumentation, optical design, and optical fabrication and testing.
- 8. I am currently a full-time, tenured Professor of Optical Sciences at the College of Optical Sciences at the University of Arizona in Tucson, Arizona, a position I have held since 2002. As a professor, I teach and perform research in the field of optical design. For example, I teach my students how to design lenses and mirrors and how to think about light so that they can design useful optical systems.



# DOCKET

# 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.

