UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Google LLC Petitioner

v.

Cywee Group Ltd. Patent Owner

Case IPR2018-01257

Patent No. 8,552,978

DECLARATION OF GARY L. BLANK, PH.D. September 14, 2018

A L A R M Find authenticated court documents without watermarks at <u>docketalarm.com</u>.

DOCKET

Table of Contents

| I. INTRODUCTION |
|--|
| I. QUALIFICATIONS AND PROFESSIONAL EXPERIENCE |
| II. LEVEL OF ORDINARY SKILL IN THE ART AND RELEVANT LEGAL STANDARDS |
| A. Level of Ordinary Skill 20 |
| B. Relevant Legal Standards22 |
| III. U.S. PATENT 8,552,978 (THE "'978 PATENT") |
| A. Specification and Prosecution History25 |
| B. Background of the Technology31 |
| 1. Prior Art Techniques |
| 2. Quaternion Mathematics for Calculating Orientation |
| IV. CLAIM CONSTRUCTION |
| A. "Comparison" |
| B. "Spatial Pointer Reference Frame"43 |
| C. "3D Pointing Device" 43 |
| V. REFERENCES RELIED ON BY THE PETITIONER |
| A. U.S. Patent 7,089,148 to Bachmann (<i>Bachmann</i> , Exhibit 1004) 44 |
| B. U.S. Patent Application Publication No. US 2004/0095317 to Zhang (<i>Zhang</i> , Exhibit 1005) |
| C. U.S. Patent 7,158,118 to Liberty (" <i>Liberty</i> ") 47 |
| VI. BACHMANN DOES NOT QUALIFY AS ANALGOUS ART 48 |
| VII. NONE OF PETITIONER'S ASSERTED CHALLENGES ESTABLISH OBVIOUSNESS |
| A. Claim 10 is Not Obvious over <i>Zhang</i> in View Of <i>Bachmann</i> |
| 1. <i>Zhang</i> in View of <i>Bachmann</i> Does Not Disclose or Suggest "a 3D Pointing Device" |
| 2. There Can Be No Motivation to Combine Zhang and Bachmann 54 |

DOCKET

1:1:4 2001 / D-

1

C =0

Case IPR2018-01257 Patent No. 8,552,978 Declaration of Gary L. Blank, Ph.D.

| B. | Dependent Claim 12 is Not Obvious over Zhang In View Of Bachmann |
|-------|---|
| | |
| C. | Claim 10 is Not Obvious over <i>Liberty</i> in View Of <i>Bachmann</i> 56 |
| VIII. | CONCLUSION |

Find authenticated court documents without watermarks at <u>docketalarm.com</u>.

DOCKET

ALARM

11:4 2001 / D-

C =0

I. INTRODUCTION

1. I make this Declaration at the request of CyWee Group, Ltd, LLC regarding my opinions as an independent expert regarding issues raised in the matter of Petition IPR2018-01257 ("Petition").

2. I am being compensated for this work, and my compensation is not dependent on the outcome of this matter.

In preparation for this Declaration, I studied Exhibits 1001 – 1011 provided
by Petitioner as well as the Petition.

4. In preparing this Declaration, I relied, in addition to the above Papers and other documents, on my knowledge and experience gained through 50 years as an engineer, professor, and consultant.

I. QUALIFICATIONS AND PROFESSIONAL EXPERIENCE

5. My Curriculum Vitae is provided as Exhibit 2002. Following is a summary of my education and relevant experience.

6. Educational Background

As a 15-year old Senior in High School, I applied for scholarships at top Engineering Schools. I was awarded a 4-year scholarship, (all tuition, books, supplies and living expenses) by the Ingersoll Foundation. I received a Bachelor of Science degree in electrical engineering with a minor in

Case IPR2018-01257 Patent No. 8,552,978 Declaration of Gary L. Blank, Ph.D.

1:1:4 0001 / D-

mathematics from the Illinois Institute of Technology. I was elected by IIT to be published in "Who's Who Among Students in American Universities and Colleges 1958-1959", page 92. I was then awarded a 1-year fellowship (all tuition, books, supplies and living expenses) by the Kaiser Foundation, and received a Master of Science degree in electrical engineering with a minor in mathematics from the University of Idaho, completing and publishing a thesis on Control Systems. I was then awarded a 3-year fellowship (all tuition, books, supplies and living expenses) and received a Ph.D. in electrical engineering with a minor in mathematics from the University of Idaho, the university of Wisconsin, Madison, completing the requirements at the age of 23 years old. My research work, on the subject of Digital Nonlinear Control Systems, was published and presented at many conferences.

I have divided my professional experience between academia and industry.
Experience in Academia includes:

After receiving my Ph.D., I held full-time academic positions at Marquette University (1964-67), Northern Illinois University ("NIU") (1982-86), and Illinois Institute of Technology (1986-1991). I also held part-time adjunct faculty positions for the University of Florida (1963-64), and the University of California, Los Angeles (1967-81). At NIU, I was involved in the creation of the Electrical Engineering Curriculum (which

DOCKET A L A R M



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.