

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Shenzhen Zhiyi Technology Co. Ltd., d/b/a iLife,
Petitioner,

v.

iRobot Corp.,
Patent Owner

Case IPR2017-02061
6,809,490

DECLARATION OF KENNETH SALISBURY, Ph.D.

TABLE OF CONTENTS

I. INTRODUCTION AND SCOPE OF WORK4

II. QUALIFICATIONS.....5

III. MATERIALS CONSIDERED7

IV. PERSON OF ORDINARY SKILL IN THE ART.....8

V. OVERVIEW OF THE '490 PATENT9

**VI. INTERPRETATION OF THE '490 PATENT CLAIMS AT
ISSUE.....13**

A. “spot-coverage mode whereby the robot operates in an isolated
area” (claims 1, 42) 14

B. “bounce mode whereby the robot travels substantially in a
direction away from an obstacle after encountering the
obstacle” (claims 1, 42)..... 19

**VII. ANALYSIS OF GROUNDS 1-2: ANTICIPATION BY UENO-642
(CLAIMS 1-3, 7, 12) AND OBVIOUSNESS BY UENO-642 IN
VIEW OF BISSETT-612 (CLAIM 42).....21**

A. “a spot-coverage mode whereby the robot operates in an
isolated area” (Claims 1-3, 7, 12, and 42).....23

B. “bounce mode whereby the robot travels substantially in a
direction away from an obstacle after encountering the
obstacle” (Claims 1-3, 7, 12, and 42).....27

C. “whereby said obstacle detection sensor comprises a tactile
sensor” (Claim 7).....29

D. “a means for manually selecting an operational mode” (Claim
12).....30

E. “wherein, when in the obstacle following mode, the robot
travels adjacent to an obstacle for a distance at least twice the
work width of the robot” (Claims 1, 42)34

VIII. LEGAL STANDARDS.....35

A. Claim Interpretation35

 B. Obviousness.....37

IX. ADDITIONAL REMARKS.....40

I, Kenneth Salisbury, of Palo Alto, California, declare the following.

I. INTRODUCTION AND SCOPE OF WORK

1. I have been retained by Fish & Richardson P.C. as an expert witness on behalf of iRobot Corp. (“iRobot” or “Patent Owner”). I understand that Shenzhen Zhiyi Technology Co. Ltd., d/b/a iLife (“iLife” or “Petitioner”) filed for *inter partes* review (“IPR”) of claims 1-3, 7, 12, and 42 of U.S. Patent No. 6,809,490 (“’490 patent”), and that the Patent Trial and Appeal Board (“PTAB” or “Board”) instituted IPR on each of these claims.

2. I have been asked to provide my independent analysis of the ’490 patent in light of the materials cited below and my knowledge and experience in the field of the ’490 patent. I have been asked to consider what a person of ordinary skill in the art as of the Critical Date of the ’490 patent (described below in paragraph 12) would have understood from the patent, including scientific and technical knowledge related to the ’490 patent. I have also been asked to consider whether the references relied on by iLife disclose or render obvious the inventions claimed by the ’490 patent.

3. I am not, and never have been, an employee of iRobot. I received no compensation for this declaration beyond my normal hourly compensation based on my time actually spent analyzing the ’490 patent, the materials cited below, and the

issues related thereto, and I will not receive any added compensation based on the outcome of any IPR or other proceeding involving the '490 patent.

II. QUALIFICATIONS

4. I am currently a Professor Emeritus (Research) at Stanford University, with joint appointments in Computer Science and Surgery, as well as a courtesy appointment in Mechanical Engineering. My academic focus has been in the fields of robotic hands and arms, haptics, robotically assisted surgery, and personal robotics.

5. My full Curriculum Vitae, including a list of publications, is attached as Appendix A to this declaration. A summary of some pertinent aspects of my background and qualifications are described in the following paragraphs.

6. After receiving my Ph.D. from Stanford in 1982 in Mechanical Engineering (Design Division), I spent approximately 15 years as a researcher at the Massachusetts Institute of Technology in the Artificial Intelligence Laboratory and in MIT's Mechanical Engineering Department, ultimately in the position of Principal Research Scientist. In 1997, I moved to California where I served for four years as Fellow and Scientific Advisor at Intuitive Surgical, Inc. In 1999, I moved to Stanford University, where I have held a number of faculty positions.

7. I have worked in the field of robotics for over 30 years. My work has focused on the mechanical design of dexterous robots, sensors, task control systems,

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.