

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE PATENT TRIAL AND APPEAL BOARD

---

APPLE INC.  
Petitioner

v.

PARUS HOLDINGS, INC.  
Patent Owner

---

IPR2020-00686  
Patent No. 7,076,431

and

IPR2020-00687  
Patent No. 9,451,084

---

**DECLARATION OF DR. LOREN TERVEEN**

IPR2020-00686  
IPR2020-00687

## TABLE OF CONTENTS

<b>I. INTRODUCTION</b> .....	<b>5</b>
A. Background and Qualifications.....	6
B. Materials Considered.....	9
<b>II. LEGAL FRAMEWORK</b> .....	<b>11</b>
A. Analogous Art.....	11
B. Obviousness .....	11
C. Secondary Considerations of Non-Obviousness.....	17
D. Claim Construction .....	18
<b>III. OPINIONS REGARDING LEVEL OF SKILL OF A PERSON HAVING ORDINARY SKILL IN THE ART</b> .....	<b>19</b>
<b>IV. BACKGROUND OF THE TECHNOLOGY FOR THE '431 AND '084 PATENTS</b> .....	<b>21</b>
<b>V. OPINIONS REGARDING THE '431 AND '084 PATENTS AND CITED PRIOR ART</b> .....	<b>34</b>
A. Description of the Alleged Invention of the '431 and '084 Patents.....	34
B. Opinions Regarding <i>Ladd</i> .....	38
C. Opinions Regarding <i>Kurosawa</i> .....	40
D. Opinions Regarding <i>Goedken</i> .....	41
E. Opinions Regarding <i>Madnick</i> .....	43
F. Opinions Regarding <i>Houser</i> .....	44
G. Opinions Regarding <i>Rutledge</i> .....	45
H. Brief Overview of the Opinions on the '431 and '084 Patents.....	46
<b>VI. '431 PATENT, GROUND 1: OPINIONS REGARDING THE COMBINATION OF <i>LADD</i>, <i>KUROSAWA</i>, AND <i>GOEDKEN</i></b> .....	<b>49</b>
A. Claim 1 of the '431 Patent .....	49
B. Claim 5 of the '431 Patent: “The system of claim 1 wherein said speaker-independent speech recognition device is configured to analyze phonemes to recognize said speech commands.” .....	106
C. Claim 6 of the '431 Patent: “The system of claim 1 wherein said speaker-independent speech recognition device is configured to recognize naturally spoken speech commands.”	109

IPR2020-00686  
IPR2020-00687

D. Claim 9 of the '431 Patent: "The system of claim 1 wherein said computer is further configured to periodically search said internet to identify new web sites and to add said new web sites to said plurality of web sites." ..... 111

E. Claims 10 and 13 of the '431 Patent ..... 114

Claim 10: "The system of claim 1 wherein said instruction set further comprises a ranking associated with each said web site address, said ranking indicating the order in which the plurality of pre-selected web sites are accessed." ..... 114

Claim 13: "The system in claim 10 wherein said computer is configured to access said plurality of web sites in order of ranking to retrieve said information requested by said user, said computer further configured to first access said web site having the highest ranking." . 114

F. Claim 14 of the '431 Patent: "The system of claim 1 further comprising a database operatively connected to said computer, said database configured to store said information gathered from said web sites in response to said information requests."..... 117

G. Claim 18 of the '431 Patent ..... 119

**VII. '431 PATENT, GROUND 2: OPINIONS REGARDING THE COMBINATION OF *LADD, KUROSAWA, GOEDKEN, AND MADNICK*..122**

A. Claim 7 of the '431 Patent: "The system of claim 1 wherein said instruction set further comprises a content descriptor associated with each said web site address, said content descriptor pre-defining a portion of said web site containing said information to be retrieved." 122

B. Claim 26(m) of the '431 Patent: "said computer further configured to establish or adjust said rankings associated with said plurality of web sites such that said web site having said information to be retrieved is assigned the highest ranking and any web sites not having said information to be retrieved are assigned lower rankings" ..... 128

**VIII. '431 PATENT, GROUND 3: THE COMBINATION OF *LADD, KUROSAWA, GOEDKEN, AND HOUSER*.....129**

A. Claim 5 of the '431 Patent: "The system of claim 1 wherein said speaker-independent speech recognition device is configured to analyze phonemes to recognize said speech commands." ..... 129

B. Claim 6 of the '431 Patent: "The system of claim 1 wherein said speaker-independent speech recognition device is configured to recognize naturally spoken speech commands." 131

**IX. '431 PATENT, GROUND 4: OPINIONS REGARDING THE COMBINATION OF *LADD, KUROSAWA, GOEDKEN, AND RUTLEDGE*132**

A. Claim 9 of the '431 Patent: "The system of claim 1 wherein said computer is further configured to periodically search said internet to identify new web sites and to add said new web sites to said plurality of web sites." ..... 132

**X. '084 PATENT, GROUND 1: OPINIONS REGARDING THE COMBINATION OF *LADD, KUROSAWA, AND GOEDKEN* .....134**

IPR2020-00686  
IPR2020-00687

A. Claim 1 of the '084 Patent.....	134
B. Claim 5 of the '084 Patent “The system of claim 1, wherein the speaker-independent speech recognition device is configured to analyze phonemes to recognize the speech commands.”.....	142
C. Claim 6 of the '084 Patent: “The system of claim 1, wherein the speaker-independent speech-recognition device is configured to recognize naturally spoken speech commands.”	143
D. Claim 10 of the '084 Patent: “The system of claim 1, wherein the instruction set further comprises a pre-defined order of access associated with each web site address, the pre-defined order of access indicating the order in which the plurality of web sites are accessed.” .....	143
E. Claim 14 of the '084 Patent: “The system of claim 1, further comprising: a database operatively connected to the computing device, the database configured to store the information gathered from the web sites in response to the information requests.” .....	144
 <b>XI. '084 PATENT, GROUND 2: OPINIONS REGARDING THE COMBINATION OF <i>LADD, KUROSAWA, GOEDKEN, AND MADNICK</i>..144</b>	
A. Claim 7 of the '084 Patent: “The system of claim 1, wherein the instruction set further comprises: a content descriptor associated with each web site address, the content descriptor pre-defining a portion of the web site containing the information to be retrieved.” .....	144
 <b>XII. '084 PATENT, GROUND 3: OPINIONS REGARDING THE COMBINATION OF <i>LADD, KUROSAWA, GOEDKEN, AND HOUSER</i>....145</b>	
A. Claim 5 of the '084 Patent: “The system of claim 1, wherein the speaker-independent speech recognition device is configured to analyze phonemes to recognize the speech commands.” .....	145
B. Claim 6 of the '084 Patent: “The system of claim 1, wherein the speaker-independent speech-recognition device is configured to recognize naturally spoken speech commands.”	145
 <b>XIII. '084 PATENT, GROUND 4: OPINIONS REGARDING THE COMBINATION OF <i>LADD, KUROSAWA, GOEDKEN, AND RUTLEDGE</i>146</b>	
<b>XIV. Conclusion.....</b>	<b>147</b>

I, Dr. Loren Terveen, hereby declare the following:

## **I. INTRODUCTION**

1. My name is Loren Terveen, and I am over 21 years of age and otherwise competent to make this Declaration. I make this Declaration based on facts and matters within my own knowledge and on information provided to me by others, and, if called as a witness, I could and would competently testify to the matters set forth herein.

2. I have been retained as a technical expert witness in this matter by Counsel for the Petitioner, Apple Inc. (“Petitioner”) to provide my independent opinions on certain issues requested by Counsel for Petitioner relating to the accompanying Petitions for Inter Partes Review of U.S. Patent No. 7,076,431 (“the ’431 Patent”) and U.S. Patent No. 9,451,084 (“the ’084 Patent”). I am being compensated at an hourly rate of \$500.00. My compensation in this matter is not based on the substance of my opinions or on the outcome of this matter.

3. I am providing this Declaration that addresses opinions for both the ’431 and ’084 Patents given the patents have substantially the same specification, which counsel has informed me is due to the ’084 Patent being a continuation of the ’431 Patent. Counsel has also informed me that both the ’431 and ’084 Patents claim the same priority date—specifically, February 4, 2000—due to both patents claiming

IPR2020-00686  
IPR2020-00687

# 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.