

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Google LLC,
Petitioner

v.

RFCyber Corp.

U.S. Patent No. 9,189,787

IPR2021-00955

DECLARATION OF STEPHEN GRAY,
UNDER 37 C.F.R. § 1.68 IN SUPPORT OF PETITION FOR
INTER PARTES REVIEW

TABLE OF CONTENTS

I.	Introduction	4
II.	Qualifications and Professional Experience.....	9
III.	Level of Ordinary Skill in the Art	11
IV.	Relevant Legal Standards.....	12
V.	Background of Smart Card Technology for Mobile Phones.....	17
	A. Memory Smart Cards and Microprocessor Smart Cards	18
	B. The Smart Card Operating System	21
	C. Smart Card Specifications	22
	1. GlobalPlatform Specifications	22
	2. EMV Specifications	24
	D. Smart Card Initialization and Personalization	25
	E. Prior Art NFC-Enabled Mobile Phone Payments	31
VI.	The '787 Patent	33
	A. Overview of the '787 Patent.....	33
	1. Portable Device	34
	2. Midlet	34
	3. E-Purse Applet	35
	4. Emulator.....	35
	5. Smart Card Module	35
	B. Prosecution History of the '787 Patent	37
VII.	Claim Construction.....	39
	A. "emulator"	40

VIII. Ground 1: The challenged claims are obvious over the combination of Staib and Chan..... 40

 A. Summary of Staib..... 40

 B. Summary of Chan..... 43

 C. Reasons to Combine Staib and Chan 47

 D. Detailed Analysis 53

IX. Conclusion..... 148

I, Stephen Gray, do hereby declare as follows:

I. INTRODUCTION

1. My name is Stephen Gray, and I have been retained by counsel for GOOGLE LLC (“Google” or “Petitioner”) as a technical expert in connection with the proceedings identified above. I submit this declaration in support of Google’s Petition for *Inter Partes* Review of U.S. Patent No. 9,189,787 (“the ’787 Patent”).

2. I am being compensated for my work in this matter at my accustomed hourly rate. 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 results of my study, the substance of my opinions, or the outcome of this matter.

3. I have been asked to provide my opinions regarding whether any of claims 1-2, 4-12, and 14-19 (“Challenged Claims”) are unpatentable as they would have been obvious to a person having ordinary skill in the art (“POSITA”). It is my opinion that the Challenged Claims would have been obvious to a POSITA at the time of alleged invention, in light of the prior art.

4. In the preparation of this Declaration, I have reviewed the following, each of which is a type of material that experts in my field would reasonably rely upon when forming their opinions:

- a. the ’787 Patent, GOOG-1001;

- b. the prosecution history of the '787 Patent, GOOG-1002;
- c. U.S. Patent Application Pub. No. 2005/0222961 to Staib et al. (“Staib”), GOOG-1005;
- d. U.S. Patent No. 7,628,322 to Holtmanns et al. (“Holtmanns”), GOOG-1006;
- e. U.S. Patent No. 6,481,632 to Wentker et al. (“Wentker”), GOOG-1007;
- f. U.S. Patent No. 6,005,942 to Chan et al. (“Chan”), GOOG-1008;
- g. U.S. Patent No. 7,669,233 to Pesonen (“Pesonen”), GOOG-1009;
- h. U.S. Patent No. 6,367,011 to Lee et al. (“Lee”), GOOG-1010;
- i. Wolfgang Rankl & Wolfgang Effing, *Smart Card Handbook* (Kenneth Cox trans., John Wiley & Sons Ltd., 3d ed. 2002) (“Smart Card Handbook”), GOOG-1011;
- j. Junko Yoshida, “Chip Makers Still Uncertain of Plunge into NFC,” *Electronic Engineering Times* 6 (Nov. 15, 2004) (“Yoshida”), GOOG-1017;
- k. Philips Semiconductors, Functional Specification: Standard Card IC MF1 IC S70, Revision 3.1 (Oct. 2002) (describing MIFARE 1K smart card), GOOG-1018;

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.