

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,
Petitioner,

v.

LIMESTONE MEMORY SYSTEMS LLC,
Patent Owner.

Case IPR2016-01567
Patent No. 5,894,441

PETITION FOR *INTER PARTES* REVIEW

Mail Stop PATENT BOARD
Patent Trial and Appeal Board
U.S. Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
Submitted Electronically via the Patent Review Processing System

TABLE OF CONTENTS

I.	MANDATORY NOTICES (37 C.F.R. § 42.8)	1
A.	Real Party-In-Interest	1
B.	Related Matters	1
C.	Counsel and Service Information	2
II.	PAYMENT OF FEES (37 C.F.R. § 42.103)	3
III.	REQUIREMENTS FOR IPR (37 C.F.R. § 42.104)	3
A.	Grounds for Standing	3
B.	Identification of Challenge and Relief Requested	3
C.	Level of Ordinary Skill in the Art	4
D.	Claim Construction	4
IV.	TECHNOLOGY BACKGROUND	5
V.	THE '441 PATENT	7
VI.	PROSECUTION HISTORY OF THE '441 PATENT	11
VII.	THE CHALLENGED CLAIMS	12
VIII.	THE PRIOR ART	12
A.	U.S. Patent No. 5,265,055 (“Horiguchi”)	12
B.	U.S. Patent No. 5,126,973 (“Gallia”)	18
IX.	HOW THE CHALLENGED CLAIMS ARE UNPATENTABLE (37 C.F.R. § 42.104 (B)(4)-(5))	26
A.	Ground 1: Claims 6-12, 14 and 15 Are Anticipated under 35 U.S.C. §102(b) by Horiguchi	26
1.	Horiguchi anticipates independent claim 6	26
2.	Horiguchi anticipates dependent claim 7	36
3.	Horiguchi anticipates dependent claim 8	39
4.	Horiguchi anticipates dependent claim 9	40
5.	Horiguchi anticipates dependent claim 10	42
6.	Horiguchi anticipates dependent claim 11	45
7.	Horiguchi anticipates dependent claim 12	46

8.	Horiguchi anticipates dependent claim 14.....	49
9.	Horiguchi anticipates dependent claim 15.....	50
B.	Ground 2: Claims 6, 7, 9, 11, 12, 14, and 15 Are Anticipated under 35 U.S.C. §102(b) by Gallia.....	51
1.	Gallia anticipates independent claim 6	51
2.	Gallia anticipates dependent claim 7	62
3.	Gallia anticipates dependent claim 9	64
4.	Gallia anticipates dependent claim 11	66
5.	Gallia anticipates dependent claim 12	67
6.	Gallia anticipates dependent claim 14	70
7.	Gallia anticipates dependent claim 15	71
C.	Ground 3: Claims 8 and 10 Are Obvious under 35 U.S.C. § 103(a) in View of Gallia and Horiguchi	73
1.	Gallia and Horiguchi disclose every limitation of dependent claim 8	73
2.	Gallia and Horiguchi disclose every limitation of dependent claim 10	73
3.	A person of ordinary skill in the art would have been motivated to combine the teachings of Gallia and Horiguchi, rendering claims 8 and 10 obvious	75
X.	THE PROPOSED GROUNDS OF UNPATENTABILITY ARE NOT REDUNDANT	78
XI.	CONCLUSION.....	80

TABLE OF EXHIBITS

Exhibit #	Exhibit Description
1001	Declaration of Dr. Pinaki Mazumder
1002	Curriculum Vitae of Dr. Pinaki Mazumder
1003	U.S. Patent No. 5,894,441
1004	File History for U.S. Patent No. 5,894,441
1005	U.S. Patent No. 5,265,055 to Horiguchi
1006	U.S. Patent No. 5,126,973 to Gallia
1007	<i>Inter Partes</i> Review No. IPR2016-00094, Petition for <i>Inter Partes</i> Review filed October 27, 2015 (without exhibits)
1008	U.S. Patent No. 5,270,975 to McAdams
1009	Japanese Patent Appl. No. H06-052696 to Minami
1010	<i>Inter Partes</i> Review No. IPR2016-00094, Patent Owner's Preliminary Response filed January 27, 2016
1011	<i>Inter Partes</i> Review No. IPR2016-00094, Decision Denying Institution filed April 12, 2016
1012	U.S. Patent No. 5,956,285 to Watanabe
1013	Masashi Horiguchi et al., <i>A Flexible Redundancy Technique for High-Density DRAMs</i> , IEEE JOURNAL OF SOLID-STATE CIRCUITS, Vol. 26, No. 1, Jan. 1991, at 12-17
1014	U.S. Patent No. 5,267,214 to Fujishima
1015	U.S. Patent No. 5,349,556 to Lee
1016	U.S. Patent No. 5,355,339 to Oh
1017	U.S. Patent No. 5,359,560 to Suh

1018	U.S. Patent No. 5,798,974 to Yamagata
1019	U.S. Patent No. 5,808,948 to Kim
1020	Masashi Horiguchi, <i>Redundancy Techniques for High-Density DRAMs</i> , INNOVATIVE SYSTEMS IN SILICON CONFERENCE, Oct. 1997, at 22-29
1021	Masashi Horiguchi et al., NANOSCALE MEMORY REPAIR (Springer 2011)
1022	Robert T. Smith et al., <i>Laser Programmable Redundancy and Yield Improvement in a 64 K DRAM</i> , IEEE JOURNAL OF SOLID-STATE CIRCUITS, VOL. SC-16, No. 5, Oct. 1981, at 506-14

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.