

Filed on behalf of Godo Kaisha IP Bridge 1

By: Michael J. Fink ([mfink@gbpatent.com](mailto:mfink@gbpatent.com))  
Greenblum & Bernstein, P.L.C.  
1950 Roland Clarke Place  
Reston, Virginia 20191  
Tel: (703) 716-1191  
Fax: (703) 716-1180

**UNITED STATES PATENT AND TRADEMARK OFFICE**

---

**BEFORE THE PATENT TRIAL AND APPEAL BOARD**

---

TAIWAN SEMICONDUCTOR MANUFACTURING COMPANY LIMITED,  
Petitioner,

v.

GODO KAISHA IP BRIDGE 1,  
Patent Owner.

---

Case IPR2016-01249  
U.S. Patent No. 6,538,324

---

**PATENT OWNER'S PRELIMINARY RESPONSE  
PURSUANT TO 37 C.F.R. §42.107**

Mail Stop PATENT BOARD, PTAB  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

## TABLE OF CONTENTS

I.	INTRODUCTION .....	1
II.	THE ‘324 PATENT .....	2
	A. Background.....	2
	B. The ‘324 Patent Claims A First Film Composed Of Crystalline Metal Containing Nitrogen Therein, And A Second Film Composed Of Amorphous Metal Nitride .....	3
	C. The ‘324 Patent Teaches That A Film Composed Of Crystalline Metal Containing Nitrogen Therein Is Formed By Increasing The RF Power In The Sputter Chamber .....	5
III.	LEVEL OF ORDINARY SKILL.....	12
IV.	CLAIM CONSTRUCTION .....	12
	A. “Said First Film Being Composed Of Crystalline Metal Containing Nitrogen Therein” .....	13
	B. “Said Second Film Being Composed Of Amorphous Metal Nitride” .....	15
	C. The Figures In The ‘324 Patent Further Support the Proposed Claim Constructions .....	16
V.	PRIOR ART .....	19
	A. U.S. Patent No. 6,887,353 (“ <i>Ding</i> ”).....	19
	1. <i>Ding</i> Does Not Disclose A Tantalum Layer Containing Nitrogen .....	20
	a. “Ta” in <i>Ding</i> refers to pure tantalum.....	21
	b. <i>Ding</i> describes an apparatus to form a layer of pure tantalum .....	22

c.	<i>Ding's</i> prosecution history establishes that the tantalum layer is pure tantalum .....	23
2.	<i>Ding</i> Does Not Disclose A First Film Being Composed Of Crystalline Metal .....	25
3.	<i>Ding</i> Does Not Disclose A Second Film Being Composed Of Amorphous Metal Nitride .....	25
4.	<i>Ding</i> Discloses Reducing The DC Power To Form A Ta Layer Over A TaN Layer .....	26
B.	U.S. Patent No. 5,893,752 (" <i>Zhang</i> ") .....	28
1.	<i>Zhang</i> Does Not Disclose A First Film Being Composed Of Crystalline Metal .....	30
2.	<i>Zhang</i> Does Not Disclose A Second Film Being Composed Of Amorphous Metal Nitride .....	31
3.	<i>Zhang</i> Discloses Using A Low RF Power Level And Does Not Disclose Varying The RF Power Level .....	31
VI.	ARGUMENT.....	33
A.	Summary Of Argument.....	33
B.	The Petition Fails to Provide Adequate Reasoning for Combining the Alleged Prior Art .....	36
C.	Petitioner Has Not Demonstrated That There Is A Reasonable Likelihood That At Least One Of The Claims Challenged In The Petition Is Unpatentable .....	39
1.	<i>Ding</i> In View Of <i>Zhang</i> Does Not Disclose "Said First Film Composed Of Crystalline Metal Containing Nitrogen Therein" .....	40
a.	It would not have been obvious that <i>Ding's</i> top Ta layer contains nitrogen in view of <i>Zhang</i> .....	40

b.	<i>Zhang</i> teaches to remove nitrogen from the top layer.....	46
c.	It would not have been obvious to include nitrogen in <i>Ding's</i> top Ta layer in view of <i>Zhang</i> .....	47
d.	A POSITA would not have been motivated to combine <i>Ding</i> and <i>Zhang</i> to apply known techniques to yield predictable results.....	51
2.	<i>Ding</i> In View Of <i>Zhang</i> Does Not Render Obvious A Second Film Being Composed Of Amorphous Metal Nitride.....	53
VII.	PETITIONER FILED TWO SEPARATE IPR PETITIONS CHALLENGING THE SAME CLAIMS OF THE '324 PATENT AND RELYING UPON THE SAME PRIOR ART AND EXHIBITS .....	54
VIII.	CONCLUSION .....	55

## TABLE OF AUTHORITIES

### CASES

<i>Application of Shetty</i> , 566 F.2d 81 (C.C.P.A. 1977) .....	38
<i>Cuozzo Speed Technologies, LLC v. Lee</i> , No. 15-446, 579 U.S. ___, slip. op. (U.S. Jun. 20, 2016).....	13
<i>Epistar, Everlight, and Lite-On v. Trustees Of Boston University</i> , IPR2013-00298 (Paper 18) .....	46, 51, 52
<i>Hansgirk v. Kemmer</i> , 102 F.2d 212 (C.C.P.A. 1939).....	38
<i>In re Kahn</i> , 441 F.3d 977 (Fed. Cir. 2006).....	37
<i>In re Magnum Oil Tools International, Ltd.</i> , ___ F.3d ___, Appeal No. 2015-1300 (Fed. Cir. July 25, 2016).....	1
<i>In re Oelrich</i> , 666 F.2d 578 (C.C.P.A. 1981).....	38, 39
<i>In re Rijckaert</i> , 9 F.3d 1531 (Fed. Cir. 1993).....	37, 38
<i>In re Robertson</i> , 169 F.3d 743 (Fed. Cir. 1999).....	30, 31, 37, 41, 44, 54
<i>In re Spormann</i> , 363 F.2d 444 (C.C.P.A. 1966).....	38
<i>KSR Int’l Co. v. Teleflex Inc.</i> , 550 U.S. 398 (2007).....	37
<i>Par Pharmaceutical, Inc. v. TWI Pharmaceuticals, Inc.</i> , 773 F.3d 1186 (Fed. Cir. 2014).....	37

# 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.