UNITED STATES PATENT AND TRADEMARK OFFICE BEFORE THE PATENT TRIAL AND APPEAL BOARD

ALIGN TECHNOLOGY, INC. Petitioner

v.

3SHAPE A/S Patent Owner

Case No. IPR2019-00118 Patent 9,962,244

PETITION FOR INTER PARTES REVIEW OF U.S. PATENT No. 9,962,244

Mail Stop PATENT BOARD

Patent Trial and Appeal Board U.S. Patent & Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450



TABLE OF CONTENTS

I.	Introduction
II.	Identification of challenge (37 C.F.R. §42.104(b))
III.	The Board should not unjustly prevent Align from challenging the '244 Patent. 4
IV.	The Board should institute trial notwithstanding 35 U.S.C. § 325(d) 5
V.	Overview of the '244 Patent
VI.	POSITA
VII.	Ground 1: The combination of Fisker and Tanaka renders claims 31 and 32 obvious
A.	Claim 3114
-	1. [31.P]: "A focus scanner for recording surface geometry and surface color of an object"
	2. [31.1]: "a multichromatic light source configured for providing a multichromatic probe light for illumination of the object"
-	3. [31.2.a]: "a color image sensor comprising an array of image sensor pixels for capturing one or more 2D images of light received from said object" 16
(4. [31.2.b]: "where the color image sensor comprises a color filter array comprising at least three types of colors filters, each allowing light in a known wavelength range, W1, W2, and W3 respectively, to propagate through the color filter"
-	5. [31.3.a]: "wherein the focus scanner is configured to operate by ranslating a focus plane along an optical axis of the focus scanner"
1	5. [31.3.b]: "wherein the focus scanner is configured to operate bycapturing a series of the 2D images, each 2D image of the series is at a different focus plane position such that the series of captured 2D images forms a stack of 2D images"
i	7. [31.4.a]: "a data processing system configured to derive surface geometry nformation for a block of said image sensor pixels from the 2D images in the stack of 2D images captured by said color image sensor"



	color	[31.4.b]: "the data processing system also configured to derive surface information for the block of said image sensor pixels from at least one D images used to derive the surface geometry information"	of
	derive wavel	[31.5.a]: "where the data processing system further is configured to e the surface geometry information is derived from light in a selected length range of the spectrum provided by the multichromatic light e"	.21
	with c	[31.5.b]: "where the color filter array is such that its proportion of pixe color filters that match the selected wavelength range of the spectrum is than 50%."	S
	a)	Fisker	.21
	b)	Tanaka	.22
	c)	Motivation to Combine: Fisker and Tanaka	.23
В	. Cl	laim 32	.25
	1.	[32.P]-[32.5.a]	.25
	filters	[32.5.b]: "the filters are arranged in a plurality of cells of 6×6 color s, where the color filters in positions (2,2) and (5,5) of each cell are of type, the color filters in positions (2,5) and (5,2) are of the W3 type."	
	a)	Fisker	.26
	b)	Tanaka	.26
	c)	Motivation to Combine: Fisker and Tanaka	.28
VIII		ounds 2 and 3: The combinations of Fisker and Suzuki (Ground 2) and ker and Cai (Ground 3) render claim 34 obvious	29
A	. Cl	laim 34	.29
	1.	Limitations [34.P]-[34.4.b]	.29
	color measu sensor	[34.4.c]: "where deriving the surface geometry information and surface information comprises calculating for several 2D images a correlation are between the portion of the 2D image captured by said block of image pixels and a weight function, where the weight function is determined on information of the configuration of the spatial pattern"	ge
		[34.4.d]: "identifying the position along the optical axis at which the sponding correlation measure has a maximum value"	.30



	surfa meas	[34.4.e]: "where the data processing system further is configured for rmining a sub-scan color for a point on a generated sub-scan based on the ce color information of the 2D image in the series in which the correlation has its maximum value for the corresponding block of image sensors."	ion r
	scan,	[34.4.f]: "where the data processing system further is configured computing an averaged sub-scan color for a number of points of the sub-where the computing comprises an averaging of sub-scan colors of bunding points on the sub-scan"	
	a)	Fisker	.33
	b)	Suzuki (Ground 2)	.34
	c)	Cai (Ground 3)	.35
	d) Ca	Motivation to Combine: Fisker and Suzuki (Ground 2) and Fisker an ii (Ground 3)	
IX.		round 4: The combination of Thiel425, Thiel 576, and Tanaka renders aims 31 and 32 obvious.	39
A	C	Claim 31	.39
	1.	Limitation [31.P]	.39
	a)	Thiel425	.39
	b)	Thiel576	.40
	c)	Motivation to Combine: Thiel425 with Thiel576	.41
	2.	Limitation [31.1]	.44
	3.	Limitation [31.2.a]	.45
	4.	Limitation [31.2.b]	.45
	a)	Thiel425/Thiel576	.45
	b)	Tanaka	.46
	c)	Motivation to Combine: Thiel425, Thiel576, and Tanaka	.46
	5.	Limitation [31.3.a]	.48
	6.	Limitation [31.3.b]	.48
	7.	Limitation [31.4.a]	.49
	8.	Limitation [31.4.b]	.50



Petition for IPR2019-00118 U.S. Patent No. 9,962,244

a) Thiel425	50
b) Thiel576	50
c) Motivation to Combine: Thiel425 and Thiel576	51
9. Limitations [31.5.a]-[31.5.b]	51
a) Thiel425/Thiel576	51
b) Tanaka	52
c) Motivation to Combine: Thiel425, Thiel576, and Tanaka	53
B. Claim 32	54
1. Limitations [32.P]-[32.4.b]	54
2. Limitation [32.5.a]-[32.5.b]	54
a) Thiel425/Theil576	54
b) Tanaka	55
c) Motivation to Combine: Thiel425, Thiel576, and Tanaka	56
X. Grounds 5 and 6: The combinations of Thiel425, Thiel576, Fisker, and Suzuki (Ground 5) and Thiel425, Thiel576, Fisker and Cai (Ground 6)	
render claim 34 obvious.	
A. Claim 34	57
1. Limitations [34.P]-[34.4.b]	57
2. Limitation [34.4.c]	57
a) Thiel425/Thiel576	57
b) Fisker	58
c) Motivation to Combine: Thiel425, Thiel576, and Fisker	58
3. Limitation [34.4.d]	61
a) Thiel425/Thiel576	61
b) Fisker	61
c) Motivation to Combine: Thiel425, Thiel576, and Fisker	62
4. Limitation [34.4.e]	62
a) Thiel425/Thiel576	62
b) Fisker	63



DOCKET

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.

