

AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
---	---

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court _____ for the Western District of Texas Waco Division _____ on the following

☐ Trademarks or ☒ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED 5/2/2022	U.S. DISTRICT COURT for the Western District of Texas Waco Division
PLAINTIFF 3Shape A/S		DEFENDANT Medit Corp.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 11,076,146	7/27/2021	3Shape A/S
2 9,629,551	4/25/2017	3Shape A/S
3 10,064,553	9/4/2018	3Shape A/S
4 10,695,151	6/30/2020	3Shape A/S
5		

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE
-------	-------------------	------

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
---	---

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court For The Western District of Texas, Waco Division on the following

☐ Trademarks or ☒ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 6:21-cv-1110	DATE FILED 10/26/2021	U.S. DISTRICT COURT For The Western District of Texas, Waco Division
PLAINTIFF 3SHAPE A/S		DEFENDANT CARESTREAM DENTAL, LLC
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 RE48,221	9/22/2020	3SHAPE A/S
2 10,695,151	6/30/2020	3SHAPE A/S
3 11,076,146	7/27/2021	3SHAPE A/S
4		
5		

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE
-------	-------------------	------

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
17/206,581	03/19/2021	Rune FISKER	0079124-000337-T1

CONFIRMATION NO. 6170

21839
BUCHANAN, INGERSOLL & ROONEY PC
1737 KING STREET
SUITE 500
ALEXANDRIA, VA 22314-2727

PUBLICATION NOTICE



OC000000126832704

Title: FOCUS SCANNING APPARATUS

Publication No. US-2021-0211638-A1

Publication Date: 07/08/2021

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently <http://www.uspto.gov/patft/>.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Public Records Division. The Public Records Division can be reached by telephone at (571) 272-3150 or (800) 972-6382, by facsimile at (571) 273-3250, by mail addressed to the United States Patent and Trademark Office, Public Records Division, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently <https://portal.uspto.gov/pair/PublicPair>. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/206,581	07/27/2021	11076146	0079124-000337-T1	6170

21839 7590 07/07/2021
BUCHANAN, INGERSOLL & ROONEY PC
1737 KING STREET
SUITE 500
ALEXANDRIA, VA 22314-2727

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site <http://pair.uspto.gov> for additional applicants):

Rune FISKER, Virum, DENMARK;
3SHAPE A/S, Copenhagen K, DENMARK
Henrik ØJELUND, Lyngby, DENMARK;
Rasmus KJÆR, København K, DENMARK;
Mike van der POEL, Rødovre, DENMARK;
Arish A. QAZI, Toronto, CANADA;
Karl-Josef HOLLENBECK, Copenhagen Ø, DENMARK;

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.

Based on USPTO Form PTO/SB/08

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		17206581
	Filing Date		2021-03-19
	First Named Inventor	Rune FISKER et al.	
	Art Unit		
	Examiner Name		
	Attorney Docket Number		0079124-000337

	67	8547374	B1	2013-10-01	Sadjadi, et al.	
	68	8564657	B2	2013-10-22	Michalke, et al.	
	69	8743114	B2	2014-06-03	Kim, et al.	
	70	8867820	B2	2014-10-21	Peeper, et al.	
	71	3878905	B2	2014-11-04	Fisker, et al.	
	72	8897526	B2	2014-11-25	Macleod, et al.	
	73	9185388	B2	2015-11-10	Mcnamer, et al.	
	74	9208612	B2	2015-12-08	Frahm, et al.	
	75	9299192	B2	2016-03-29	Kopelman, Avi	
	76	9322646	B2	2016-04-26	Pochiraju, et al.	
	77	9629551	B2	2017-04-25	Fisker, et al.	
	78	10064553	B2	2018-09-04	Fisker, et al.	
	79	10349042	B1	2109-07-09	Fisker, et al.	

U.S.PATENT APPLICATION PUBLICATIONS

Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
Change(s) applied to document, /K.S.S./ 6/28/2021	1	~~2050237581~~	A1	2005-10-27	Knighton et al. 20050237581	
	2	20060092133	A1	2006-05-04	Touma et al.	
	3	20100009308	A1	2010-01-14	Wen et al.	
	4	20030164952	A1	2003-09-04	Deichmann et al.	
	5	~~20060212260~~	A1	2006-09-21	Kopelman et al. 20060212260	
	6	20070172112	A1	2007-07-26	Paley et al.	



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/206,581	03/19/2021	Rune FISKER	0079124-000337-T1	6170
21839	7590	06/29/2021		
BUCHANAN, INGERSOLL & ROONEY PC			EXAMINER	
1737 KING STREET			MESA, JOSE M	
SUITE 500				
ALEXANDRIA, VA 22314-2727				
			ART UNIT	PAPER NUMBER
			2484	
			NOTIFICATION DATE	DELIVERY MODE
			06/29/2021	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ADIPDOC1@BIPC.com

**UNITED STATES DEPARTMENT OF COMMERCE****U.S. Patent and Trademark Office**

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

APPLICATION NO./ CONTROL NO.	FILING DATE	FIRST NAMED INVENTOR/ PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.
17/206,581	03/19/2021	FISKER et al.	0079124-000337-T1

BUCHANAN, INGERSOLL & ROONEY PC 1737 KING STREET SUITE 500 ALEXANDRIA, VA 22314-2727		EXAMINER	
		JOSE M MESA	
		ART UNIT	PAPER
		2484	20210615

DATE MAILED: _____

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner for Patents

1449 5/28/2021 contains a typographical error in the list of references cited by the Applicant, for example, 2050237581 and 2060212260 are missing a zero, so it should be 20050237581 and 20060212260. Thanks.

/JOSE M MESA/
Examiner, Art Unit 2484

/THAI Q TRAN/
Supervisory Patent Examiner, Art Unit 2484

<i>Notice of References Cited</i>	Application/Control No. 17/206,581		Applicant(s)/Patent Under Reexamination FISKER et al.	
	Examiner JOSE M MESA		Art Unit 2484	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20050237581-A1	10-2005	Knighton, Mark S.	H04N13/204	358/473
*	B	US-20060212260-A1	09-2006	Kopelman; Avi	A61C7/002	702/152
	C					
	D					
	E					
	F					
	G					
	H					
	I					
	J					
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

21839 7590 05/28/2021
BUCHANAN, INGERSOLL & ROONEY PC
1737 KING STREET
SUITE 500
ALEXANDRIA, VA 22314-2727

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/206,581	03/19/2021	Rune FISKE	0079124-000337-T1	6170

TITLE OF INVENTION: FOCUS SCANNING APPARATUS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1200	\$0.00	\$0.00	\$1200	08/30/2021

EXAMINER	ART UNIT	CLASS-SUBCLASS
MESA, JOSE M	2484	348-046000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 BUCHANAN INGERSOLL
2 & ROONEY PC
3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

3Shape A/S

Kobenhavn K, DENMARK

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. Fees submitted: ☒ Issue Fee ☐ Publication Fee (if required) ☐ Advance Order - # of Copies

4b. Method of Payment: (Please first reapply any previously paid fee shown above)

☒ Electronic Payment via EFS-Web ☐ Enclosed check ☐ Non-electronic payment by credit card (Attach form PTO-2038)

☒ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. 02-4800

5. Change in Entity Status (from status indicated above)

- ☐ Applicant certifying micro entity status. See 37 CFR 1.29
☐ Applicant asserting small entity status. See 37 CFR 1.27
☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature /WCRoland/

Date June 3, 2021

Typed or printed name William C. Rowland

Registration No. 30,888

Electronic Patent Application Fee Transmittal				
Application Number:		17206581		
Filing Date:		19-Mar-2021		
Title of Invention:		FOCUS SCANNING APPARATUS		
First Named Inventor/Applicant Name:		Rune FISKER		
Filer:		William C. Rowland/Stacey Pflieger		
Attorney Docket Number:		0079124-000337-T1		
Filed as Large Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
UTILITY APPL ISSUE FEE	1501	1	1200	1200

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				1200

Electronic Acknowledgement Receipt

EFS ID:	42887981
Application Number:	17206581
International Application Number:	
Confirmation Number:	6170
Title of Invention:	FOCUS SCANNING APPARATUS
First Named Inventor/Applicant Name:	Rune FISKER
Customer Number:	21839
Filer:	William C. Rowland/Stacey Pflieger
Filer Authorized By:	William C. Rowland
Attorney Docket Number:	0079124-000337-T1
Receipt Date:	03-JUN-2021
Filing Date:	19-MAR-2021
Time Stamp:	12:30:19
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$ 1200
RAM confirmation Number	E202163C30482442
Deposit Account	024800
Authorized User	Stacey Pflieger

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

37 CFR 1.16 (National application filing, search, and examination fees)

37 CFR 1.17 (Patent application and reexamination processing fees)

37 CFR 1.19 (Document supply fees)
 37 CFR 1.20 (Post Issuance fees)
 37 CFR 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	337if.pdf	151072	no	1
			544598fe5f6ba3cb5f0a13667349cd03f744994e		

Warnings:

Information:

2	Fee Worksheet (SB06)	fee-info.pdf	30474	no	2
			a4717803df35ef8e9d7290f16999ea31559a4f59		

Warnings:

Information:

Total Files Size (in bytes):	181546
-------------------------------------	--------

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

21839 7590 05/28/2021
BUCHANAN, INGERSOLL & ROONEY PC
1737 KING STREET
SUITE 500
ALEXANDRIA, VA 22314-2727

EXAMINER

MESA, JOSE M

ART UNIT

PAPER NUMBER

2484

DATE MAILED: 05/28/2021

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/206,581	03/19/2021	Rune FISHER	0079124-000337-T1	6170

TITLE OF INVENTION: FOCUS SCANNING APPARATUS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1200	\$0.00	\$0.00	\$1200	08/30/2021

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

21839 7590 05/28/2021
BUCHANAN, INGERSOLL & ROONEY PC
1737 KING STREET
SUITE 500
ALEXANDRIA, VA 22314-2727

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/206,581	03/19/2021	Rune FISKE	0079124-000337-T1	6170

TITLE OF INVENTION: FOCUS SCANNING APPARATUS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1200	\$0.00	\$0.00	\$1200	08/30/2021

EXAMINER	ART UNIT	CLASS-SUBCLASS
MESA, JOSE M	2484	348-046000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,

1 _____

(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

2 _____

3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. Fees submitted: ☐ Issue Fee ☐ Publication Fee (if required) ☐ Advance Order - # of Copies _____

4b. Method of Payment: (Please first reapply any previously paid fee shown above)

☐ Electronic Payment via EFS-Web ☐ Enclosed check ☐ Non-electronic payment by credit card (Attach form PTO-2038)

☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. Change in Entity Status (from status indicated above)

☐ Applicant certifying micro entity status. See 37 CFR 1.29

☐ Applicant asserting small entity status. See 37 CFR 1.27

☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/206,581	03/19/2021	Rune FISKER	0079124-000337-T1	6170
21839	7590	05/28/2021	EXAMINER	
BUCHANAN, INGERSOLL & ROONEY PC			MESA, JOSE M	
1737 KING STREET			ART UNIT	
SUITE 500			PAPER NUMBER	
ALEXANDRIA, VA 22314-2727			2484	

DATE MAILED: 05/28/2021

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 17/206,581	Applicant(s) FISKER et al.	
	Examiner JOSE M MESA	Art Unit 2484	AIA (FITF) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 03/26/2021.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☒ The allowed claim(s) is/are 2-31. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a) ☐ All b) ☐ Some *c) ☐ None of the:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____.

3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892) 2. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date <u>03/26/2021 04/02/2021</u> . 3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____. 4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.	5. ☐ Examiner's Amendment/Comment 6. ☒ Examiner's Statement of Reasons for Allowance 7. ☐ Other _____.
--	--

/JOSE M MESA/ Examiner, Art Unit 2484	/THAI Q TRAN/ Supervisory Patent Examiner, Art Unit 2484
--	---

DETAILED ACTION

Notice of Pre-AIA or AIA Status

The present application is being examined under the pre-AIA first to invent provisions.

Allowable Subject Matter

1. Claims 2-31 are allowed.

The following is an examiner's statement of reasons for allowance: **Independent claim 2** recites the uniquely distinct features for: "...a pattern generator configured to generate, using a light source, a probe light with a plurality of configurations in the form of a time-varying illumination pattern; an optical system for transmitting the probe light towards the object along an optical path thereby illuminating at least a part of the object with the time-varying illumination pattern, and for transmitting at least a part of the light returned from the object to the at least one camera to form a plurality of 2D images, wherein the 3D geometry is determined based on the plurality of 2D images and the time-varying illumination pattern;..." **And independent claim 22** recites the uniquely distinct features for: "...using a light source and a pattern generator to generate a probe light with a plurality of configurations in the form of a time-varying illumination pattern; transmitting the probe light, through a tip of an intraoral scanner inserted into the oral cavity, towards the object along an optical path, thereby illuminating at least a part of the object with the time-varying illumination pattern; transmitting at least a part of the light returned from the object to at least one camera accommodating an array of sensor elements to form a plurality of 2D images, wherein the 3D geometry is determined based on the plurality of 2D images and the time-varying illumination pattern;..." The

closest prior art in Babayoff et al. (US 2005/0283065) teaches a device 100 comprises a main illumination source 31 for illuminating the object of interest 26, typically a part of the intraoral cavity, and is optically coupled to main optics 41 to provide depth Z values for an array range of X-Y points (according to a known frame of reference) along the surface of the object 26. Detection optics 60 comprises an image sensor, typically a CCD, that is preferably monochromatic to maximise the resolution of the device, and which typically defines the X-Y frame of reference. Alternatively, the CCD may be adapted to receive color images. The detection optics 60 receives image data from the main optics 41 and the image processor 24 determines the depth Z values for each X-Y point illuminated on the object 26 based on this image data, Heinz et al. (US 2007/0041729) teaches an illustrative illumination arrangement 800 using a multimode optical fiber 802 to monitor a surface 804 with a detector 805 (e.g., detector 104 of FIG. 1, detector 302 of FIG. 3A, or detector A of FIG. 7, 7A). Optical radiation 806 that reflects from surface 804 will exhibit time-varying changes if surface 804 vibrates, if fiber 802 moves across surface 804, or if distance d changes (e.g., through tilt or movement of surface 804). The multimode interference pattern that illuminates detector 805 is time-varying in accordance with the movement of surface 804 (or end 814 or d), however, either singular or in combination, fails to anticipate or render the above underlined limitations obvious.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOSE M MESA whose telephone number is (571)270-1706. The examiner can normally be reached on Monday-Friday 8:30AM-6:00PM ET.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an

interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at <http://www.uspto.gov/interviewpractice>.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thai Tran can be reached on 571-272-7382. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

5/17/2021

**/JOSE M MESA/
Examiner, Art Unit 2484**

**/THAI Q TRAN/
Supervisory Patent Examiner, Art Unit 2484**

Electronic Acknowledgement Receipt

EFS ID:	42292896
Application Number:	17206581
International Application Number:	
Confirmation Number:	6170
Title of Invention:	FOCUS SCANNING APPARATUS
First Named Inventor/Applicant Name:	Rune FISKER
Customer Number:	21839
Filer:	William C. Rowland/Mayra Castillo
Filer Authorized By:	William C. Rowland
Attorney Docket Number:	0079124-000337-T1
Receipt Date:	26-MAR-2021
Filing Date:	
Time Stamp:	13:13:54
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
------------------------	----

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		PRELIMINARY_AMENDMENT--0079124-000337.pdf	100878 e456b92be137c3e14110d2effe0ae7d1c30d563c	yes	8

Multipart Description/PDF files in .zip description					
Document Description			Start	End	
Preliminary Amendment			1	1	
Claims			2	7	
Applicant Arguments/Remarks Made in an Amendment			8	8	
Warnings:					
Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	IDS_1449--0079124-000337.pdf	232574	no	19
			ff31b36d173025829d4ce7d250cfc62d39b0c70c		
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
Total Files Size (in bytes):			333452		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of	)	
	)	
Rune FISKER	)	Group Art Unit: Unassigned
	)	
Application No.: 17/206,581	)	Examiner: Unassigned
	)	
Filed: March 19, 2021	)	Confirmation No.: Unassigned
	)	
For: FOCUS SCANNING APPARATUS	)	
	)	
	)	
	)	
	)	

PRELIMINARY AMENDMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Commissioner:

Prior to examination of the above-captioned patent application, kindly amend the application as follows:

AMENDMENTS TO THE CLAIMS:

The following listing of claims will replace all prior versions and listings of claims in this application.

LISTING OF CLAIMS:

1. (Cancelled)
2. (New) An intraoral scanner for determining the 3D geometry and color of at least a part of the surface of an object in an oral cavity, the intraoral scanner comprising:
 - at least one camera accommodating an array of sensor elements;
 - a pattern generator configured to generate, using a light source, a probe light with a plurality of configurations in the form of a time-varying illumination pattern;
 - an optical system for transmitting the probe light towards the object along an optical path thereby illuminating at least a part of the object with the time-varying illumination pattern, and for transmitting at least a part of the light returned from the object to the at least one camera to form a plurality of 2D images, wherein the 3D geometry is determined based on the plurality of 2D images and the time-varying illumination pattern;
 - a tip configured to be inserted into the oral cavity; and
 - a hardware processor configured to:
 - o selectively switch a color of the probe light, thereby illuminating the object with different colors at different times;
 - o record different images by the at least one camera at the different times, thereby recording images of the object with the different colors; and
 - o combine the different colors from the different images, thereby obtaining the color of the surface of the object,

wherein the intraoral scanner is wireless, and wherein the at least one camera is a high-speed camera.

3. (New) The intraoral scanner according to claim 2, wherein the pattern generator includes at least one translucent and/or transparent pattern element.

4. (New) The intraoral scanner according to claim 2, wherein the pattern generator is based on a projector such as a liquid crystal display (LCD) projector or a digital light processing (DLP) projector.

5. (New) The intraoral scanner according to claim 2, wherein the different colors are provided by at least three monochromatic light sources of the light source.

6. (New) The intraoral scanner according to claim 5, wherein the at least three monochromatic light sources are light-emitting diodes (LEDs) or a segmented LED.

7. (New) The intraoral scanner according to claim 5, wherein the hardware processor is configured to selectively switch the color of the probe light by switching on and off the at least three monochromatic light sources.

8. (New) The intraoral scanner according to claim 2, wherein the optical system is substantially achromatic.

9. (New) The intraoral scanner according to claim 2, wherein the probe light is directed towards the object in a direction substantially parallel with the longitudinal axis of the tip, and wherein the probe light is further reflected towards the object by a single reflective mirror located in the tip.

10. (New) The intraoral scanner according to claim 2, wherein the hardware processor is further configured to locally process raw 3D data into data for the 3D geometry, such that the data for the 3D geometry is wirelessly transmitted instead of the raw 3D data, and wherein the raw 3D data is based on the plurality of 2D images.

11. (New) The intraoral scanner according to claim 2, wherein the hardware processor is further configured to locally process raw 3D data into data for the 3D geometry, such that the data for the 3D geometry is wirelessly transmitted at a reduced data rate in comparison with transmission of raw 3D data, and wherein the raw 3D data is based on the plurality of 2D images.

12. (New) The intraoral scanner according to claim 10, wherein the data for the 3D geometry is wirelessly transmitted to a workstation.

13. (New) The intraoral scanner according to claim 10, wherein the hardware processor processes the raw 3D data into data for the 3D geometry in real time.

14. (New) The intraoral scanner according to claim 2, wherein a temporal correlation measure is computed with sensor signals, in the at least one camera, recorded at different times while the plurality of configurations in the form of a time-varying illumination pattern are changed.

15. (New) The intraoral scanner according to claim 14, wherein the temporal correlation measure is computed for each individual sensing element.

16. (New) The intraoral scanner according to claim 14, wherein the temporal correlation measure is based on a reference signal that is based on knowledge or on calibration of the plurality of configurations of the time-varying illumination pattern.

17. (New) The intraoral scanner according to claim 2, wherein the high-speed camera records images at a frame rate of at least 500 frames per second or at a frame rate of at least 2000 frames per second.

18. (New) The intraoral scanner according to claim 2, wherein the intraoral scanner comprises at least two light sources, each of the light sources configured to operate with the pattern generator.

19. (New) The intraoral scanner according to claim 18, wherein the at least two light sources are configured to operate with different wavelengths.

20. (New) The intraoral scanner according to claim 19, wherein the intraoral oral scanner is configured such that the different wavelengths can be manually selected, whereby the 3D geometry is dependent on which light source is being manually selected.

21. (New) The intraoral scanner according to claim 2, wherein the intraoral scanner further comprises polarization optics.

22. (New) A method for determining the 3D geometry and color of at least a part of the surface of an object in an oral cavity, said method comprising the steps of:

- using a light source and a pattern generator to generate a probe light with a plurality of configurations in the form of a time-varying illumination pattern;
- transmitting the probe light, through a tip of intraoral scanner inserted into the oral cavity, towards the object along an optical path, thereby illuminating at least a part of the object with the time-varying illumination pattern;
- transmitting at least a part of the light returned from the object to at least one camera accommodating an array of sensor elements to form a plurality of 2D images,

- wherein the 3D geometry is determined based on the plurality of 2D images and the time-varying illumination pattern;
- selectively switching a color of the probe light, thereby illuminating the object with different colors at different times;
 - recording different images by the at least one camera at the different times, thereby recording images of the object with the different colors;
 - combining the different colors from the different images to obtain the color of the surface of the object; and
 - wirelessly transmitting the data for the 3D geometry.

23. (New) The method according to claim 22, wherein the plurality of 2D images is recorded using a high-speed camera.

24. (New) The method according to claim 22, wherein the method further comprises a step of locally processing, on the intraoral scanner, raw 3D data into data for the 3D geometry, such that the data for the 3D geometry is wirelessly transmitted instead of the raw 3D data, and wherein the raw 3D data is based on the plurality of 2D images.

25. (New) The method according to claim 22, wherein the method further comprises a step of locally processing, on the intraoral scanner, raw 3D data into data for the 3D geometry, such that the data for the 3D geometry is wirelessly transmitted at a reduced data rate in comparison with transmission of raw 3D data, and wherein the raw 3D data is based on the plurality of 2D images.

26. (New) The method according to claim 24, wherein the step of wirelessly transmitting the data for the 3D geometry is to a workstation.

27. (New) The method according to claim 24, wherein the step of locally processing is in real time.

28. (New) The method according to claim 22, where the method further comprises a step of computing a temporal correlation measure with sensor signals, in the at least one camera, recorded at different times while the plurality of configurations in the form of a time-varying illumination pattern are changed.

29. (New) The method according to claim 28, wherein the temporal correlation measure is computed for each individual sensing element.

30. (New) The method according to claim 28, wherein the temporal correlation measure is based on a reference signal that is based on knowledge or on calibration of the plurality of configurations of the time-varying illumination pattern.

31. (New) The method according to claim 22, wherein method further comprises a step of manually selecting a wavelength for which the intraoral scanner obtains the 3D geometry.

REMARKS

By way of the foregoing amendment, Claim 1 has been cancelled. Claims 2 - 31 have been added. No new matter is introduced by these changes.

It is requested that the application be examined on the basis of the amendments presented herein. Early and favorable consideration of this application is respectfully requested.

Should any questions arise in connection with this application, it is respectfully requested that the undersigned be contacted at the number indicated below.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

Date March 26, 2021

By: /WCRoland/
William C. Rowland
Registration No. 30,888

Customer No. 21839
703 836 6620