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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
18/483,949	10/10/2023	Hiep V. Nguyen	USCO-053-06

CONFIRMATION NO. 1038

152017
US Conec Ltd.
1138 25th Street Southeast
Hickory, NC 28602

PUBLICATION NOTICE

OC000000067780716

Date Mailed: 02/02/2024

Title: Alignment Adapter and Alignment Design for a Connector Therefor

Publication No.US-2024-0036271-A1
Publication Date:02/01/2024

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 Managment, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

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Senko Advanced Components v. US Conec Ltd.
IPR2024-00805

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/483,949	10/10/2023	Hiep V. Nguyen	USCO-053-06	1038

152017 7590 01/23/2024

US Conec Ltd.
1138 25th Street Southeast
Hickory, NC 28602

EXAMINER
ROJAS, OMAR R

ART UNIT	PAPER NUMBER
2874	

NOTIFICATION DATE	DELIVERY MODE
01/23/2024	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):

docket@usconec.com
eofficeaction@appcoll.com
michael@leetzow.com

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United States Patent and Trademark Office
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APPLICATION NO.	ISSUE DATE	PATENT NO.
18/483,949	23-Jan-2024	11880075

US Conec Ltd.
1138 25th Street Southeast
Hickory, NC 28602

EGRANT NOTIFICATION

Your electronic patent grant (eGrant) is now available, which can be accessed via Patent Center at https://patentcenter.uspto.gov

The electronic patent grant is the official patent grant under 35 U.S.C. 153. For more information, please visit https://www.uspto.gov/electronicgrants

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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/483,949	01/23/2024	11880075	USCO-053-06	1038

152017 7590 01/03/2024

US Conec Ltd.
1138 25th Street Southeast
Hickory, NC 28602

ISSUE NOTIFICATION

The projected patent number and issue date are specified above. The patent will issue electronically. The electronically issued patent is the official patent grant pursuant to 35 U.S.C. § 153. The patent may be accessed on or after the issue date through Patent Center at https://patentcenter.uspto.gov/. The patent will be available in both the public and the private sides of Patent Center. Further assistance in electronically accessing the patent, or about Patent Center, is available by calling the Patent Electronic Business Center at 1-888-217-9197.

The USPTO is implementing electronic patent issuance with a transition period, during which period the USPTO will mail a ceremonial paper copy of the electronic patent grant to the correspondence address of record. Additional copies of the patent (i.e., certified and presentation copies) may be ordered for a fee from the USPTO's Certified Copy Center at https://certifiedcopycenter.uspto.gov/index.html. The Certified Copy Center may be reached at (800)972-6382.

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 Center (https://patentcenter.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 Patents Stakeholder Experience (OPSE), Stakeholder Support Division (SSD) at (571)-272-4200.

INVENTOR(s) (Please see PATENT CENTER site https://patentcenter.uspto.gov for additional inventors):

Hiep V. Nguyen, Fort Mill, SC;
Darrell R. Childers, Hickory, NC;
Michael E. Hughes, Hickory, NC;
Jillcha Fekadu Wakjira, Hickory, NC;
Joseph P. Howard, Hickory, NC;

APPLICANT(s) (Please see PATENT CENTER site https://patentcenter.uspto.gov for additional applicants):

US Conec Ltd., Hickory, NC;

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.

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ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/483,949	**12/13/2023 11:46:29 AM Z ET**	**USCO-053-06**

Title of Invention

Alignment Adapter and Alignment Design for a Connector Therefor

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	1038	FILED BY	Michael Leetzow
PATENT CENTER #	63595106	FILING DATE	10/10/2023
CUSTOMER #	152017	FIRST NAMED INVENTOR	Hiep V. Nguyen
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	-

Documents

TOTAL DOCUMENTS: 1

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
web85b.pdf	3	Issue Fee Payment (PTO-85B)	61 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
web85b.pdf	4ACF87E66BF0E87DE5E177E805B505065E7956A5B4B7F31391 D2FF5FE28737821DEC75DF0FD189345AF6B333BCF54258281 E0034BC100A7C52ACE7D7180AF137

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 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.

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ELECTRONIC PAYMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/483,949	12/13/2023 11:46:29 AM Z ET	USCO-053-06

Title of Invention

Alignment Adapter and Alignment Design for a Connector Therefor

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	1038	FILED BY	Michael Leetzow
PATENT CENTER #	63595106	AUTHORIZED BY	-
CUSTOMER #	152017	FILING DATE	10/10/2023
CORRESPONDENCE ADDRESS	-	FIRST NAMED INVENTOR	Hiep V. Nguyen

Payment Information

PAYMENT METHOD	PAYMENT TRANSACTION ID	PAYMENT AUTHORIZED BY
CARD / 1000	E2023BCB52489804	Michael Leetzow

FEE CODE	DESCRIPTION	ITEM PRICE($)	QUANTITY	ITEM TOTAL($)
1501	UTILITY ISSUE FEE	1200.00	1	1200.00
			TOTAL AMOUNT:	$1,200.00

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

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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.

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ISSUE FEE TRANSMITTAL FORM

APPLICATION #	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET #
18483949	10/10/2023	Hiep Nguyen	USCO-053-06

Title of Invention

Alignment Adapter and Alignment Design for a Connector Therefor

Application Information

APPLICATION TYPE	Nonprovisional Application under 35 USC 111(a)	DATE DUE	03/13/2024
CONFIRMATION #	1038	ISSUE FEE DUE	$ 1200
EXAMINER	OMAR ROJAS	PUBLICATION DUE	$ 0
GROUP ART UNIT	2874	TOTAL FEES DUE	$1200
CLASS - SUBCLASS	385/059000	PREV. PAID FEE	$ 0
ENTITY STATUS	Regular Undiscounted		

1. CHANGE OF CORRESPONDENCE ADDRESS AND/OR INDICATION OF FEE ADDRESS (37 CFR 1.33 & 1.363)

Correspondence Address

CURRENT ADDRESS

Maintenance Fee Address

CURRENT ADDRESS

☐ Change of correspondence address requested,system generated AIA/122-PC form attached

☐ Fee address indication requested, system generatedSB/47-PC form attached

2. ENTITY STATUS

Change in Entity Status

NEW STATUS

3. THE FOLLOWING FEES ARE SUBMITTED

☑ Issue Fee

☑ Publication Fee

4. FEE AUTHORIZATION

☐ I authorize USPTO to apply my previously paid issue fee to the current fees due

☐ The Director is herby authorized to apply my previously paid issue fee to the current fee due and to charge deficient fees to Deposit Account Number:

☐ If in addition to the payment of the issue fee amount submitted with this form, there are any discrepencies in any amount(s) due, the Director is authorized to charge any deficiency, or credit any overpayment, to Deposit Account Number:

5. FIRM AND/OR ATTORNEY NAMES TO BE PRINTED

NOTE: If no name is listed, no name will be printed
For printing on the patent front page, list to be displayed as entered

Michael L Leetzow PLLC
Shubhrangshu Sengupta

6. ASSIGNEE NAME(S) AND RESIDENCE DATA TO BE PRINTED

NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

US Conec Ltd.	Hickory, NC UNITED STATES	Corporation

Signature

I certify, in accordance with 37 CFR 1.4(d)(4) that I am an attorney or agent registered to practice before the Patent and Trademark Office who has filed and has been granted power of attorney in this application. I also

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Senko Advanced Components v. US Conec Ltd.
IPR2024-00805

certify that this Fee(s) Transmittal form is being transmitted to the USPTO via Patent Center on the date indicated below.

Signature	Name	Registration #	Date
/Michael L. Leetzow/	Michael Leetzow	35932	12/13/2023

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Senko Advanced Components v. US Conec Ltd.
IPR2024-00805

UNITED STATES PATENT AND TRADEMARK OFFICE

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United States Patent and Trademark Office
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Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

152017 7590 12/13/2023

US Conec Ltd.
1138 25th Street Southeast
Hickory, NC 28602

EXAMINER	
ROJAS, OMAR R	
ART UNIT	PAPER NUMBER
2874	

DATE MAILED: 12/13/2023

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/483,949	10/10/2023	Hiep V. Nguyen	USCO-053-06	1038

TITLE OF INVENTION: Alignment Adapter and Alignment Design for a Connector Therefor

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	03/13/2024

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 40% the amount of undiscounted fees, and micro entity fees are 20% the amount of undiscounted 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. 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.

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Senko Advanced Components v. US Conec Ltd.
IPR2024-00805

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via the USPTO patent electronic filing system.

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 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. **Because electronic patent issuance may occur shortly after issue fee payment, any desired continuing application should preferably be filed prior to payment of this issue fee in order not to jeopardize copendency.**

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

152017 7590 12/13/2023

US Conec Ltd.
1138 25th Street Southeast
Hickory, NC 28602

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.

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 the USPTO patent electronic filing system 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.
18/483,949	10/10/2023	Hiep V. Nguyen	USCO-053-06	1038

TITLE OF INVENTION: Alignment Adapter and Alignment Design for a Connector Therefor

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	03/13/2024

EXAMINER	ART UNIT	CLASS-SUBCLASS
ROJAS, OMAR R	2874	385-059000

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/AIA/122 or PTO/SB/122) attached.

❑ "Fee Address" indication (or "Fee Address" Indication form PTO/AIA/47 or PTO/SB/47; Rev 03-02 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 _____

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)

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

❑ Electronic Payment via the USPTO patent electronic filing system ❑ 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

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.

❑ Applicant asserting small entity status. See 37 CFR 1.27

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.

❑ Applicant changing to regular undiscounted fee 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. _____

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/483,949	10/10/2023	Hiep V. Nguyen	USCO-053-06	1038

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EXAMINER	
ROJAS, OMAR R	
ART UNIT	PAPER NUMBER
2874	

DATE MAILED: 12/13/2023

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. The United States Patent and Trademark Office (USPTO) collects the information in this record under authority of 35 U.S.C. 2. The USPTO's system of records is used to manage all applicant and owner information including name, citizenship, residence, post office address, and other information with respect to inventors and their legal representatives pertaining to the applicant's/owner's activities in connection with the invention for which a patent is sought or has been granted. The applicable Privacy Act System of Records Notice for the information collected in this form is COMMERCE/PAT-TM-7 Patent Application Files, available in the Federal Register at 78 FR 19243 (March 29, 2013).
https://www.govinfo.gov/content/pkg/FR-2013-03-29/pdf/2013-07341.pdf

Routine uses of the information in this record may include disclosure to:

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2) a federal, state, local, or international agency, in response to its request;
3) a contractor of the USPTO having need for the information in order to perform a contract;
4) the Department of Justice for determination of whether the Freedom of Information Act (FOIA) requires disclosure of the record;
5) a Member of Congress submitting a request involving an individual to whom the record pertains, when the individual has requested the Member's assistance with respect to the subject matter of the record;
6) a court, magistrate, or administrative tribunal, in the course of presenting evidence, including disclosures to opposing counsel in the course of settlement negotiations;
7) the Administrator, General Services Administration (GSA), or their designee, during an inspection of records conducted by GSA under authority of 44 U.S.C. 2904 and 2906, in accordance with the GSA regulations and any other relevant (i.e., GSA or Commerce) directive, where such disclosure shall not be used to make determinations about individuals;
8) 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));
9) the Office of Personnel Management (OPM) for personnel research purposes; and
10) the Office of Management and Budget (OMB) for legislative coordination and clearance.

If you do not furnish the information requested on this form, the USPTO may not be able to process and/or examine your submission, which may result in termination of proceedings, abandonment of the application, and/or expiration of the patent.

Notice of Allowability	Application No. 18/483,949	Applicant(s) Nguyen et al.	
	Examiner Omar R Rojas	Art Unit 2874	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 the terminal disclaimer filed on November 30, 2023.
   ☐ 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 1-21 . 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 _____.
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 _____.

/Omar R Rojas/
Primary Examiner, Art Unit 2874

EXAMINER'S AMENDMENT/COMMENT

Notice of Pre-AIA or AIA Status

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

Response to Amendment

With regards to the amendment filed on November 27, 2023, all the requested changes to the claims have been entered. Applicant's constructive efforts to advance prosecution are appreciated. Claim(s) 1-21 are pending.

Information Disclosure Statement

The prior art documents submitted by applicant(s) in the Information Disclosure Statement(s) ("IDS") filed on November 27, 2023 have all been considered and made of record (note the attached copy of form(s) PTO/SB/08a).

Terminal Disclaimer

The terminal disclaimer filed on November 30, 2023 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of Patent No. 10,712,509 has been reviewed and is accepted. The terminal disclaimer has been recorded.

REASONS FOR ALLOWANCE

Claims 1-21 are allowed.

The following is an examiner's statement of reasons for allowance:

Patent No. 6,406,192 to Chen et al. and Patent Pub. No. US 2012/0057824 A1 to Katoh, both of record, are considered the closest available prior art. Applicant's arguments filed on September 24, 2019 in related application no. 15/855,788, issued as Pat. No. 10,712,509, are also deemed persuasive with respect to the pending claims in the instant application.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Omar R. Rojas whose telephone number is (571)272-2357. The examiner can normally be reached Monday-Friday, 10AM-6PM EST.

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, Thomas Hollweg can be reached on 571-270-1739. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of published or unpublished applications may be

obtained from Patent Center. Unpublished application information in Patent Center is available to registered users. To file and manage patent submissions in Patent Center, visit: https://patentcenter.uspto.gov. Visit https://www.uspto.gov/patents/apply/patent-center for more information about Patent Center and https://www.uspto.gov/patents/docx for information about filing in DOCX format. For additional questions, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Omar R Rojas/
Primary Examiner
Art Unit 2874

or
December 1, 2023

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/483,949	Nguyen et al.
	Examiner	Art Unit
	Omar R Rojas	2874

CPC - Searched*		
Symbol	Date	Examiner
G02B6/3879,3881,3885,3893	11/15/2023	/ORR/
Updated above.	12/01/2023	/ORR/

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
Updated previous EAST search from related application 15/855,788 - See PE2E Search History Printout.	11/15/2023	/ORR/
Updated previous EAST search from related application 15/855,788 - See PE2E Search History Printout.	12/01/2023	/ORR/

/Omar R Rojas/ Primary Examiner, Art Unit 2874	

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Senko Advanced Components v. US Conec Ltd.
IPR2024-00805

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/483,949	Nguyen et al.
	Examiner	Art Unit
	Omar R Rojas	2874

Interference Search			
US Class/CPC Symbol	**US Subclass/CPC Group**	**Date**	**Examiner**
PGPUB, USPAT - text search	See PE2E Search History printout.	11/15/2023	/ORR/
Updated above .	See PE2E Search History printout.	12/01/2023	/ORR/

/Omar R Rojas/ Primary Examiner, Art Unit 2874	

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Senko Advanced Components v. US Conec Ltd.
IPR2024-00805

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/483,949	Nguyen et al.
	Examiner	**Art Unit**
	Omar R Rojas	2874

CPC							
Symbol						**Type**	**Version**
G02B	/	6	/	3879		F	2013-01-01
G02B	/	6	/	3817		I	2013-01-01
G02B	/	6	/	3825		I	2013-01-01
G02B	/	6	/	3881		I	2013-01-01
G02B	/	6	/	3885		I	2013-01-01

CPC Combination Sets								
Symbol						**Type**	**Set**	**Ranking**	**Version**
	/		/						

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	21	
/Omar R Rojas/ Primary Examiner, Art Unit 2874	01 December 2023	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	5A

U.S. Patent and Trademark Office — Part of Paper No.: 20231201a

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Senko Advanced Components v. US Conec Ltd.
IPR2024-00805

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/483,949	Nguyen et al.
	Examiner	**Art Unit**
	Omar R Rojas	2874

INTERNATIONAL CLASSIFICATION					
CLAIMED					
G02B6/38	/	6	/	38	

NON-CLAIMED					
	/		/		

US ORIGINAL CLASSIFICATION	
CLASS	**SUBCLASS**

CROSS REFERENCES(S)						
CLASS	**SUBCLASS (ONE SUBCLASS PER BLOCK)**					

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	21	
/Omar R Rojas/ Primary Examiner, Art Unit 2874	01 December 2023	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	5A

U.S. Patent and Trademark Office — Part of Paper No.: 20231201a

Senko Ex. 1018, Page 24
Senko Advanced Components v. US Conec Ltd.
IPR2024-00805

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/483,949	Nguyen et al.
	Examiner	**Art Unit**
	Omar R Rojas	2874

☑ Claims renumbered in the same order as presented by applicant ☐ CPA ☑ T.D. ☐ R.1.47

CLAIMS

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	21	
/Omar R Rojas/ Primary Examiner, Art Unit 2874	01 December 2023	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	5A

U.S. Patent and Trademark Office

Part of Paper No.: 20231201a

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Senko Advanced Components v. US Conec Ltd.
IPR2024-00805

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-22)
Approved for use through 05/31/2024. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(**Not for submission under 37 CFR 1.99)**

Application Number	18483949
Filing Date	2023-10-10
First Named Inventor	Hiep V. Nguyen
Art Unit	2874
Examiner Name	Omar R. Rojas
Attorney Docket Number	USCO-053-06

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /ORR/

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	10156684	B2	2018-12-18	Nguyen et al.	
	2	4645295	A	1987-02-24	Pronovost	
	3	5121454	A	1992-06-09	Iwano et al.	
	4	5129024	A	1992-07-01	Honma	
	5	5537501	A	1996-07-16	Iwano et al.	
	6	6293708	B1	2001-09-25	Ohtsuka et al.	
	7	6331079	B1	2001-12-01	Grois	
	8	6361218	B1	2002-03-26	Matasek et al.	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /ORR/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(**Not for submission under 37 CFR 1.99)**

Application Number	18483949
Filing Date	2023-10-10
First Named Inventor	Hiep V. Nguyen
Art Unit	2874
Examiner Name	Omar R. Rojas
Attorney Docket Number	USCO-053-06

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /ORR/

	9	6406192	B1	2002-06-18	Chen et al.	
	10	6764222	B1	2004-07-20	Szilagyi et al.	
	11	9086546	B2	2015-07-21	Jones	
	12	9366829	B2	2016-06-14	Czosnowski et al.	

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U.S.PATENT APPLICATION PUBLICATIONS Remove

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
	1	20020172469	A1	2002-11-21	Benner	
	2	20050135752	A1	2005-06-23	Kiani et al.	
	3	20050281509	A1	2005-12-22	Cox et al.	
	4	20080131055	A1	2008-06-05	Edward et al.	
	5	20110091158	A1	2011-04-21	Iwaya et al.	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /ORR/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	18483949
	Filing Date	2023-10-10
	First Named Inventor	Hiep V. Nguyen
	Art Unit	2874
	Examiner Name	Omar R. Rojas
	Attorney Docket Number	USCO-053-06

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /ORR/

	6	20120057824	A1	2012-03-08	Katoh	
	7	20140241689	A1	2014-08-28	Bradley et al.	

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FOREIGN PATENT DOCUMENTS Remove

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] ¡	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1	202600189	CN	U	2012-12-12	Unknown		☐
	2	2004354693	JP	A	2004-12-16	Nakagawa et al.		☐
	3	2013100892	WO	A1	2013-07-04	Tsuzaki et al.		☐
	4	2013179197	WO	A1	2013-12-05	Xue et al.		☐

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NON-PATENT LITERATURE DOCUMENTS Remove

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1	Molex Incorporated, HBMT Motherboard Adapter Drawing, dated October 31, 2005	☐

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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /ORR/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**	Application Number	18483949
	Filing Date	2023-10-10
	First Named Inventor	Hiep V. Nguyen
	Art Unit	2874
	Examiner Name	Omar R. Rojas
	Attorney Docket Number	USCO-053-06

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /ORR/

EXAMINER SIGNATURE			
Examiner Signature	/Omar R Rojas/	Date Considered	12/01/2023

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /ORR/

Bibliographic Data

Application No: 18/483,949

Foreign Priority claimed: ○ Yes ◉ No

35 USC 119 (a-d) conditions met: ☐ Yes ☑ No ☐ Met After Allowance

Verified and Acknowledged: /Omar R Rojas/ (Examiner's Signature) | (Initials)

Title: Alignment Adapter and Alignment Design for a Connector Therefor

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
10/10/2023	385	2874	USCO-053-06
RULE			

APPLICANTS

US Conec Ltd., Hickory, NC, UNITED STATES

INVENTORS

Hiep V. Nguyen, Fort Mill, SC, UNITED STATES

Darrell R. Childers, Hickory, NC, UNITED STATES

Michael E. Hughes, Hickory, NC, UNITED STATES

Jillcha Fekadu Wakjira, Hickory, NC, UNITED STATES

Joseph P. Howard, Hickory, NC, UNITED STATES

CONTINUING DATA

This application is a CON of 17857300 07/05/2022

17857300 is a CON of 17145864 01/11/2021 PAT 11385415

17145864 is a CON of 16214317 12/10/2018 PAT 10890723

16214317 is a CON of 15855750 12/27/2017 PAT 10156684

15855750 is a DIV of 14214931 03/15/2014 PAT 9857538

14214931 has PRO of 61789499 03/15/2013

FOREIGN APPLICATIONS

IF REQUIRED, FOREIGN LICENSE GRANTED**

10/23/2023

STATE OR COUNTRY

UNITED STATES

ADDRESS

US Conec Ltd.
1138 25th Street Southeast
Hickory, NC 28602

UNITED STATES

FILING FEE RECEIVED

$6,740

PE2E SEARCH - Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
L810	19	("10156684"|"20020172469"|"20050135752"|"20050281509"|"20080131055"|"20110091158"|"20120057824"|"20140241689"|"4645295"|"5121454"|"5129024"|"5537501"|"6293708"|"6331079"|"6361218"|"6406192"|"6764222"|"9086546"|"9366829").PN.	(US-PGPUB; USPAT)	OR	ON	ON	2023/12/01 05:51 PM
L811	61	L638 and L640	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/12/01 06:04 PM
L812	22	L642 and L639	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/12/01 06:04 PM
L813	51	L640 and ferrule	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/12/01 06:04 PM
L814	105	("20050281509" | "20060063436" | "20100266245" | "4111522" | "5082346" | "5093881" | "5155784" | "5276755" | "5647043" | "5689598" | "5692079" | "5838856" | "6095695" | "6422760" | "7785018").PN. OR ("2005/0281509" | "6095695" | "9086546").URPN.	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2023/12/01 06:04 PM
L815	152	("4526430" | "4550362" | "4647130" | "4767179" | "5082344" | "5121454" | "5125056" | "5228865" | "5257947" | "5542015" | "5619604" | "5764834" | "5845027" | "5960138" | "6007256" | "6050845" | "6076975" | "6146023" | "6331079").PN. OR ("6331079" | "6361218" | "6364536" | "6406192" | "6422760").URPN.	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2023/12/01 06:04 PM
L816	316	L658 and g02b6/$.cpc.	(US-PGPUB; USPAT)	OR	ON	ON	2023/12/01 06:04 PM

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Senko Advanced Components v. US Conec Ltd.
IPR2024-00805

L817	747	G02B6/3879.cpc. and G02B6/3885.cpc.	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2023/12/01 06:04 PM
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L819	360	G02B6/3878.cpc. and G02B6/3885.cpc.	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2023/12/01 06:04 PM
L820	303	L675 and G02B6/3885.cpc.	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2023/12/01 06:05 PM
L821	196	G02B6/3879.cpc. and L678	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2023/12/01 06:05 PM
L822	385	L681 and L682	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/12/01 06:05 PM
L823	545	G02B6/3897.cpc. and L682	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2023/12/01 06:05 PM
L824	1729	G02B6/3825.cpc. and G02B6/3885.cpc.	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2023/12/01 06:05 PM
L825	61	L698 and L700	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/12/01 06:05 PM
L826	22	L702 and L699	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/12/01 06:05 PM
L827	29	ferrule.ti,ab,clm. and L700	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/12/01 06:05 PM
L828	180	L702 and L709	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/12/01 06:05 PM
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		| "5257947" | "5542015" | "5619604" | "5764834" | "5845027" | "5960138" | "6007256" | "6050845" | "6076975" | "6146023" | "6331079").PN. OR ("6331079" | "6361218" | "6364536" | "6406192" | "6422760").URPN.					
L830	747	G02B6/3879.cpc. and G02B6/3885.cpc.	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2023/12/01 06:05 PM
L831	360	G02B6/3878.cpc. and G02B6/3885.cpc.	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2023/12/01 06:05 PM
L832	303	L735 and G02B6/3885.cpc.	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2023/12/01 06:05 PM
L833	385	L741 and L742	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/12/01 06:05 PM
L834	196	G02B6/3879.cpc. and L738	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2023/12/01 06:05 PM
L835	1346	G02B6/3897.cpc. and G02B6/3885.cpc.	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2023/12/01 06:05 PM
L836	545	G02B6/3897.cpc. and L742	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2023/12/01 06:05 PM
L837	1729	G02B6/3825.cpc. and G02B6/3885.cpc.	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2023/12/01 06:05 PM
L838	1784	G02B6/3879.cpc.	(US-PGPUB; USPAT; EPO; JPO)	OR	OFF	OFF	2023/12/01 06:05 PM
L839	3939	G02B6/3893.cpc.	(US-PGPUB; USPAT; EPO; JPO)	OR	OFF	OFF	2023/12/01 06:05 PM
L840	3939	G02B6/3893.cpc.	(US-PGPUB; USPAT; EPO; JPO)	OR	OFF	OFF	2023/12/01 06:06 PM
L841	361	G02B6/3881.cpc.	(US-PGPUB; USPAT; EPO; JPO)	OR	OFF	OFF	2023/12/01 06:06 PM
L842	5340	G02B6/3885.cpc.	(US-PGPUB; USPAT; EPO; JPO)	OR	OFF	OFF	2023/12/01 06:06 PM
L843	4105	808 NOT (805 806)	(US-PGPUB; USPAT; EPO; JPO)	OR	OFF	OFF	2023/12/01 06:06 PM

PE2E SEARCH - Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
N776	6	(body and ferrule and opening and projection and latch$3 and (shape	(US-PGPUB)	OR	OFF	OFF	2023/12/01 06:15 PM

N777	4	width)).clm. (holder AND ferrule AND projection AND latch$3 AND shape).clm.	(US-PGPUB; USPAT)	OR	OFF	OFF	2023/12/01 06:15 PM

Senko Ex. 1018, Page 35
Senko Advanced Components v. US Conec, Ltd.
IPR2024-00805

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ELECTRONIC PAYMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/483,949	11/30/2023 12:26:49 PM Z ET	USCO-053-06

Title of Invention

Alignment Adapter and Alignment Design for a Connector Therefor

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	1038	FILED BY	Michael Leetzow
PATENT CENTER #	63436355	AUTHORIZED BY	-
CUSTOMER #	152017	FILING DATE	10/10/2023
CORRESPONDENCE ADDRESS	-	FIRST NAMED INVENTOR	Hiep V. Nguyen

Payment Information

PAYMENT METHOD	PAYMENT TRANSACTION ID	PAYMENT AUTHORIZED BY
CARD / 7852	E2023ATC27235751	Michael Leetzow

FEE CODE	DESCRIPTION	ITEM PRICE($)	QUANTITY	ITEM TOTAL($)
1814	STATUTORY DISCLAIMER, INCLUDING TERMINAL DISCLAIMER	170.00	1	170.00
			TOTAL AMOUNT:	$170.00

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

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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.

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TERMINAL DISCLAIMER TO OBVIATE A PROVISIONAL DOUBLE PATENTING REJECTION OVER A PENDING "REFERENCE" APPLICATION

APPLICATION #	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET #
18483949	10/10/2023	Hiep Nguyen	USCO-053-06

Title of Invention

Alignment Adapter and Alignment Design for a Connector Therefor

☑ Filing of terminal disclaimer does not obviate requirement for response under 37 CFR 1.111 to outstanding Office Action

☑ This electronic Terminal Disclaimer is not being used for a Joint Research Agreement.

Owner	Percent interest
US Conec Ltd.	100%
Total	100%

The owner(s) of percent interest listed above in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of any patent granted on pending reference Application Number(s)

Application #	Filing Date

as the term of any patent granted on said reference application may be shortened by any terminal disclaimer filed prior to the grant of any patent on the pending reference application. The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and any patent granted on the reference application are commonly owned. This agreement runs with any patent granted on the

instant application and is binding upon the grantee, its successors or assigns.
In making the above disclaimer, the owner does not disclaim the terminal part of any patent granted on the instant application that would extend to the expiration date of the full statutory term of any patent granted on said reference application, "as the term of any patent granted on said reference application may be shortened by any terminal disclaimer filed prior to the grant of any patent on the pending reference application," in the event that any such patent granted on the pending reference application: expires for failure to pay a maintenance fee, is held unenforceable, is found invalid by a court of competent jurisdiction, is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321, has all claims canceled by a reexamination certificate, is reissued, or is in any manner terminated prior to the expiration of its full statutory term as shortened by any terminal disclaimer filed prior to its grant.

The owner(s) of percent interest listed above in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of prior patent number(s)

Patent #
10712509

as the term of said prior patent is presently shortened by any terminal disclaimer. The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and the prior patent are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.
In making the above disclaimer, the owner does not disclaim the terminal part of the term of any patent granted on the instant application that would extend to the expiration date of the full statutory term of the prior patent, "as the term of said prior patent is presently shortened by any terminal disclaimer," in the event that said prior patent later:

- expires for failure to pay a maintenance fee;
- is held unenforceable;
- is found invalid by a court of competent jurisdiction;
- is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321;
- has all claims canceled by a reexamination certificate;
- is reissued; or
- is in any manner terminated prior to the expiration of its full statutory term as presently shortened by any terminal disclaimer.



Terminal disclaimer fee under 37 CFR 1.20(d) included with Electronic Terminal Disclaimer request.

Applicant claims the following entity status:
Regular Undiscounted

I hereby declare that all statements made herein of my own knowledge are true and that all statemnts made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

I certify, in accordance with 37 CFR 1.4(d)(4) that I am: An attorney or agent registered to practice before the Patent and Trademark Office who is of record in this application

Signature	Name	Registration #
/Michael L. Leetzow/	Michael Leetzow	35932

* Statement under 37 CFR 3.73(b) is required if terminal disclaimer is signed by the assignee (owner). Form PTO/SB/96 may be used for making this certification. See MPEP 324.

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United States Patent and Trademark Office
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APPROVAL LETTER

APPLICATION #	FILING DATE	APPLICANT/PATENT UNDER REEXAMINATION
18/483,949	10/10/2023	Hiep Nguyen

Title of Invention

Alignment Adapter and Alignment Design for a Connector Therefor

Electronic terminal disclaimer filed on 11/30/2023

☑ Approved

This patent is subject to a Terminal Disclaimer

Approved / Disapproved by: Electronic Terminal Disclaimer automatically approved

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ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/483,949	**11/30/2023 12:26:49 PM Z ET**	**USCO-053-06**

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Alignment Adapter and Alignment Design for a Connector Therefor

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CONFIRMATION #	1038	FILED BY	Michael Leetzow
PATENT CENTER #	63436355	FILING DATE	10/10/2023
CUSTOMER #	152017	FIRST NAMED INVENTOR	Hiep V. Nguyen
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	-

Documents

TOTAL DOCUMENTS: 2

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
petition-request.pdf	3	Terminal Disclaimer-Filed (Electronic)	48 KB
grantLetter.pdf	1	Terminal Disclaimer-Electronic-Approved	19 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
petition-request.pdf	9D9F646D3FC2A22EF0BBC10125887AB9224DB1B2BCBD84EC CA501D5112CB824FF6A06114195CB379BF9E1AC67C54077F7

F1A0D542DFA6EAEA73FACFC97965A82

grantLetter.pdf F0FF0D4779839DCD0395589B07F46547B5A399B41CB0E8B214185FA6EBEA448E014357A143AB5DB6CA43F4AF9E8F5C81F00AD7031EC6A96A10695838CEA3C2E2

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New Applications Under 35 U.S.C. 111

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New International Application Filed with the USPTO as a Receiving Office

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
18/483,949	10/10/2023	Hiep V. Nguyen	USCO-053-06

CONFIRMATION NO. 1038

152017
US Conec Ltd.
1138 25th Street Southeast
Hickory, NC 28602

POA ACCEPTANCE LETTER

OC000000065086419

Date Mailed: 11/30/2023

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 11/21/2023.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

/ytdemisse/

Application Number	Application/Control No.	Applicant(s)/Patent under Reexamination	
* 18/483,949 *	18/483,949	Nguyen et al.	
	Examiner	**Art Unit**	
	ROJAS, OMAR R	2874	

Document Code - DISQ	**Internal Document - DO NOT MAIL**

TERMINAL DISCLAIMER	☐ APPROVED	☑ DISAPPROVED
Date Filed: **27 November 2023**	**This patent is subject to a Terminal Disclaimer**	

Approved/Disapproved by:

/JEAN PROCTOR/

Technology Center: OPLC

Telephone: (571)272-1040

TD is not complete

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ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/483,949	**11/27/2023 03:29:35 PM Z ET**	**USCO-053-06**

Title of Invention

Alignment Adapter and Alignment Design for a Connector Therefor

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	1038	FILED BY	Michael Leetzow
PATENT CENTER #	63385090	FILING DATE	10/10/2023
CUSTOMER #	152017	FIRST NAMED INVENTOR	Hiep V. Nguyen
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	-

Documents

TOTAL DOCUMENTS: 1

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
USCO-053-06_USPTO_AIA26_20231121_151250.pdf	1	Terminal Disclaimer Filed	236 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
USCO-053-06_USPTO_AIA26_20231121_151250.pdf	D4BE9D83B9D0B4B4FCA11F263A3C5BC760B037B4EF2BDDC0C14E8B9F31E85750778C169266239581A997CF92CA8423FE10FC0952E582B41F078A78D493FF08F2

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PTO/AIA/26 (04-14)
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TERMINAL DISCLAIMER TO OBVIATE A DOUBLE PATENTING REJECTION OVER A "PRIOR" PATENT	Docket Number (Optional)

In re Application of:

Application No.:

Filed:

For:

The applicant, _____, owner of _____ percent interest in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of **prior patent** No. _____ as the term of said **prior patent** is presently shortened by any terminal disclaimer. The applicant hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and the **prior patent** are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.

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expires for failure to pay a maintenance fee;
is held unenforceable;
is found invalid by a court of competent jurisdiction;
is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321;
has all claims canceled by a reexamination certificate;
is reissued; or
is in any manner terminated prior to the expiration of its full statutory term as presently shortened by any terminal disclaimer.

Check either box 1 or 2 below, if appropriate.

1. ☐ The undersigned is the applicant. If the applicant is an assignee, the undersigned is authorized to act on behalf of the assignee.

I hereby acknowledge that any willful false statements made are punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

2. ☑ The undersigned is an attorney or agent of record. Reg. No._____

_____ _____
Signature Date

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Typed or printed name

_____ _____
Title Telephone Number

☑ Terminal disclaimer fee under 37 CFR 1.20(d) included.

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ELECTRONIC PAYMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/483,949	**11/27/2023 03:29:35 PM Z ET**	**USCO-053-06**

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Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	1038	FILED BY	Michael Leetzow
PATENT CENTER #	63385090	AUTHORIZED BY	-
CUSTOMER #	152017	FILING DATE	10/10/2023
CORRESPONDENCE ADDRESS	-	FIRST NAMED INVENTOR	Hiep V. Nguyen

Payment Information

PAYMENT METHOD	PAYMENT TRANSACTION ID	PAYMENT AUTHORIZED BY
CARD / 7852	**E2023AQF29548131**	**Michael Leetzow**

FEE CODE	DESCRIPTION	ITEM PRICE($)	QUANTITY	ITEM TOTAL($)
1814	STATUTORY DISCLAIMER, INCLUDING TERMINAL DISCLAIMER	170.00	1	170.00
			TOTAL AMOUNT:	**$170.00**

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New International Application Filed with the USPTO as a Receiving Office

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PTO/SB/08a (01-22)
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	18483949
Filing Date	2023-10-10
First Named Inventor	Hiep V. Nguyen
Art Unit	2874
Examiner Name	Omar R. Rojas
Attorney Docket Number	USCO-053-06

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	10156684	B2	2018-12-18	Nguyen et al.	
	2	4645295	A	1987-02-24	Pronovost	
	3	5121454	A	1992-06-09	Iwano et al.	
	4	5129024	A	1992-07-01	Honma	
	5	5537501	A	1996-07-16	Iwano et al.	
	6	6293708	B1	2001-09-25	Ohtsuka et al.	
	7	6331079	B1	2001-12-01	Grois	
	8	6361218	B1	2002-03-26	Matasek et al.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	18483949
	Filing Date	2023-10-10
	First Named Inventor	Hiep V. Nguyen
	Art Unit	2874
	Examiner Name	Omar R. Rojas
	Attorney Docket Number	USCO-053-06

	9	6406192	B1	2002-06-18	Chen et al.	
	10	6764222	B1	2004-07-20	Szilagyi et al.	
	11	9086546	B2	2015-07-21	Jones	
	12	9366829	B2	2016-06-14	Czosnowski et al.	

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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
	1	20020172469	A1	2002-11-21	Benner	
	2	20050135752	A1	2005-06-23	Kiani et al.	
	3	20050281509	A1	2005-12-22	Cox et al.	
	4	20080131055	A1	2008-06-05	Edward et al.	
	5	20110091158	A1	2011-04-21	Iwaya et al.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
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	Filing Date	2023-10-10
	First Named Inventor	Hiep V. Nguyen
	Art Unit	2874
	Examiner Name	Omar R. Rojas
	Attorney Docket Number	USCO-053-06

	6	20120057824	A1	2012-03-08	Katoh	
	7	20140241689	A1	2014-08-28	Bradley et al.	

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FOREIGN PATENT DOCUMENTS Remove

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] ¡	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1	202600189	CN	U	2012-12-12	Unknown		☐
	2	2004354693	JP	A	2004-12-16	Nakagawa et al.		☐
	3	2013100892	WO	A1	2013-07-04	Tsuzaki et al.		☐
	4	2013179197	WO	A1	2013-12-05	Xue et al.		☐

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NON-PATENT LITERATURE DOCUMENTS Remove

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1	Molex Incorporated, HBMT Motherboard Adapter Drawing, dated October 31, 2005	☐

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**		
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	Filing Date	2023-10-10
	First Named Inventor	Hiep V. Nguyen
	Art Unit	2874
	Examiner Name	Omar R. Rojas
	Attorney Docket Number	USCO-053-06

EXAMINER SIGNATURE			
Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(**Not for submission under 37 CFR 1.99)**

Application Number	18483949
Filing Date	2023-10-10
First Named Inventor	Hiep V. Nguyen
Art Unit	2874
Examiner Name	Omar R. Rojas
Attorney Docket Number	USCO-053-06

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☒ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Michael L. Leetzow/	Date (YYYY-MM-DD)	2023-11-27
Name/Print	Michael L. Leetzow	Registration Number	35932

This collection of information is required by 37 CFR 1.97 and 1.98. 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 1 hour 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, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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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 the Freedom of Information Act requires disclosure of these record s.

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 inspections 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.

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ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/483,949	**11/27/2023 03:10:30 PM Z ET**	**USCO-053-06**

Title of Invention

Alignment Adapter and Alignment Design for a Connector Therefor

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	1038	FILED BY	Michael Leetzow
PATENT CENTER #	63384410	FILING DATE	10/10/2023
CUSTOMER #	152017	FIRST NAMED INVENTOR	Hiep V. Nguyen
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	-

Documents

TOTAL DOCUMENTS: 3

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
USCO-053-06_ResponseOA_20231121.pdf	8	Applicant Arguments/Remarks Made in an Amendment	136 KB
USCO-053-06_IDSTransmittal.pdf	2	Transmittal Letter	120 KB
20231121_USCO05306.pdf	6	Information Disclosure Statement (IDS) Form (SB08)	1253 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)

USCO-053-06_ResponseOA_20231121.pdf	31EC1C746EEF697B4A905D53A9729A79B19CD8A37253BFD0449BB641796EEC17F33BBEDB3FEA8A898313435B1F03B4AD9F8033B11DA72F018E7AFBFAA3B948F6
USCO-053-06_IDSTransmittal.pdf	5335EB5DC26AD9ABEDA55AF23F285B61AE93A940A0ACA2D0C58E658E0B60EE9933B72F75B2083FDAEC4411C438499D5B4C8855ACA49F04921E23F96CEBC172EC
20231121_USCO05306.pdf	A707F4A48855487B93813C0C0790210E31F20EACF1F79991EDAB7D84343FFC572B6A4B99C9FFB9267F15FBB6B9DEDD569E0BB006F4CBA674EDFAC981326F94D8

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 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.

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ELECTRONIC PAYMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/483,949	**11/27/2023 03:10:30 PM Z ET**	**USCO-053-06**

Title of Invention

Alignment Adapter and Alignment Design for a Connector Therefor

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	1038	FILED BY	Michael Leetzow
PATENT CENTER #	63384410	AUTHORIZED BY	-
CUSTOMER #	152017	FILING DATE	10/10/2023
CORRESPONDENCE ADDRESS	-	FIRST NAMED INVENTOR	Hiep V. Nguyen

Payment Information

PAYMENT METHOD	PAYMENT TRANSACTION ID	PAYMENT AUTHORIZED BY
CARD / 7852	**E2023AQF10507091**	**Michael Leetzow**

FEE CODE	DESCRIPTION	ITEM PRICE($)	QUANTITY	ITEM TOTAL($)
1806	SUBMISSION OF AN INFORMATION DISCLOSURE STATEMENT	260.00	1	260.00
			TOTAL AMOUNT:	**$260.00**

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for 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

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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.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor:	Hiep V. Nguyen	Group Art Unit: 2874
Serial No.:	18/483,949	Examiner: Omar R. Rojas
Filing Date:	October 10, 2023	
Title:	Alignment Adapter and Alignment Design for a Connector Therefor	

Commissioner for Patents
PO Box 1450
Arlington VA 22313-1450

INFORMATION DISCLOSURE STATEMENT UNDER 37 C.F.R. § 1.97(c)

Pursuant to 37 C.F.R. §§ 1.56 and 1.97(c), Applicant brings to the attention of the Examiner the documents listed on the attached PTO 1449. This Information Disclosure Statement is being filed after the events recited in Section 1.97(b) but, to the undersigned's knowledge, before the mailing date of either a Final Action or a Notice of Allowance. Under the provisions of 37 C.F.R. § 1.97(c), this Information Disclosure Statement is accompanied by a fee of $260.00 as specified by Section 1.17(p).

Copies of the listed documents were previously submitted in a prior application (including foreign references, NPLs, and translations), serial no. 17/857,300 filing date of July 5, 2022, upon which applicant relies for the benefits provided in 35 U.S.C. § 120. Applicant respectfully requests that the Examiner consider the listed documents and indicate that they were considered by making appropriate notations on the attached form.

This submission does not represent that a search has been made or that no better art exists and does not constitute an admission that each or all of the listed documents are material or

constitute "prior art." If the Examiner applies any of the documents as prior art against any claims in the application and Applicant determines that the cited documents do not constitute "prior art" under United States law, Applicant reserves the right to present to the office the relevant facts and law regarding the appropriate status of such documents.

Applicant further reserves the right to take appropriate action to establish the patentability of the disclosed invention over the listed documents, should one or more of the documents be applied against the claims of the present application.

Respectfully submitted,

/Michael L. Leetzow/
Michael L. Leetzow PLLC
Registration No. 35,932
1205 S Keswick Dr.
Troy, VA 22974
Telephone: 407/302-9970

Date: November 27, 2023

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor:	Hiep V. Nguyen	Group Art Unit: 2874
Serial No.:	18/483,949	Examiner: Omar R. Rojas
Filing Date:	October 10, 2023	
Title:	Alignment Adapter and Alignment Design for a Connector Therefor	

Commissioner for Patents
PO Box 1450
Arlington VA 22313-1450

AMENDMENT

In response to an Office Action mailed on November 21, 2023, Applicant amends the application as follows:

IN THE CLAIMS:

1. (Currently Amended) A fiber optic connector for a multi-fiber ferrule, comprising:

a ferrule holder having a central opening extending longitudinally from a first end to a second end;

a multi-fiber ferrule housed within the central opening and having at least two optical fibers supported therein, the multi-fiber ferrule being exposed at an opening at the first end of the ferrule holder, the opening at the first end being in communication with the central opening;

a boot extending in a rearward direction from the ferrule holder and supporting the at least two optical fibers,

wherein the ferrule holder has a main body with a top side and a bottom side joined by two opposing side walls,

wherein a separation between the top side and the bottom side is more than a separation between the opposing side walls, the opposing side walls being parallel to a fiber alignment axis of the at least two optical fibers at an end face of the multi-fiber ferrule, and

wherein a front end of the ferrule holder has a lead-in or a chamfer;

a first projection on a first outside surface on the top side of the main body and extending longitudinally along the top side;

a second projection on a second outside surface on the bottom side of the main body and extending longitudinally along the bottom side,

wherein the first projection has a different shape than the second projection; and

a latching mechanism on at least one of the top ~~surface~~ side and the bottom ~~surface~~ side,

wherein the latching mechanism is unconnected to the first projection and the second projection.

2. (Original) The fiber-optic connector according to claim 1, wherein the multi-fiber ferrule is an MT type ferrule.

3. (Original) The fiber-optic connector according to claim 1, wherein a top surface of the

first projection is rearward of the front end of the ferrule holder.

4. (Original) The fiber-optic connector according to claim 1, wherein a horizontal top surface of the second projection is rearward of the front end of the ferrule holder.

5. (Original) The fiber-optic connector according to claim 1, wherein a top surface of each of the first projection and the second projection is rearward of the front end of the ferrule holder.

6. (Original) The fiber-optic connector according to claim 1, wherein the opposing sidewalls are smooth and solid.

7. (Original) The fiber-optic connector according to claim 1, wherein the opposing sidewalls are flat.

8. (Original) The fiber-optic connector according to claim 1, wherein the first projection and the second projection have different widths.

9. (Original) The fiber-optic connector according to claim 1, further comprising:

a spring positioned rearward of the multi-fiber ferrule and configured to bias the multi-fiber ferrule towards the front end of the ferrule holder.

10. (Original) The fiber-optic connector according to claim 9, wherein the spring at least partially surrounds the at least two optical fibers.

11. (Currently Amended) The fiber-optic connector according to claim 1, further comprising:

a cutout in each of the top ~~surface~~ side and the bottom ~~surface~~ side.

12. (Original) The fiber-optic connector according to claim 1, wherein a portion of the multi-fiber ferrule extends forward of the main body.

13. (Original) The fiber-optic connector according to claim 1, wherein the multi-fiber ferrule extends beyond the main body.

14. (Original) The fiber-optic connector according to claim 1, wherein the multi-fiber ferrule is flush with the front end of the main body.

15. (Original) The fiber-optic connector according to claim 1, wherein at least one of the first projection or the second projection extends along a length of the ferrule holder.

16. (Original) The fiber-optic connector according to claim 1, wherein at least one of the first projection or the second projection has a chamfered front end or a lead-in.

17. (Original) The fiber-optic connector according to claim 1, wherein the first and the second projections each have a vertical side surface to align the ferrule holder with a vertical wall to control a horizontal direction of movement of the ferrule holder relative to an adapter.

18. (Currently Amended) A fiber optic connector for a multi-fiber ferrule, comprising:

a ferrule holder having a central opening extending longitudinally from a first end to a second end;

a multi-fiber ferrule housed within the central opening and having at least two optical fibers supported therein, the multi-fiber ferrule being exposed at an opening at the first end of the ferrule holder, the opening at the first end being in communication with the central opening;

a boot extending in a rearward direction from the ferrule holder and supporting the at least two optical fibers,

wherein the ferrule holder has a main body with a top side and a bottom side joined by two opposing side walls,

wherein a separation between the top side and the bottom side is more than a separation between the opposing side walls, the opposing side walls being parallel to a fiber alignment axis

of the at least two optical fibers at an end face of the multi-fiber ferrule, and

wherein a front end of the ferrule holder has a chamfer;

a first projection extending longitudinally along the top side;

a second projection extending longitudinally along the bottom side,

wherein the first projections is on a first outside surface of the top side of the main body and has at least one dimension that is different than the second projection on an opposite second outside surface on the bottom side of the main body; and

a latching mechanism on at least one of the top ~~surface~~ side and the bottom ~~surface~~ side,

wherein the latching mechanism is separated longitudinally from the first projection and the second projection.

19. (Currently Amended) A fiber optic connector for a multi-fiber ferrule, comprising:

a ferrule holder having a central opening extending longitudinally from a first end to a second end;

a multi-fiber ferrule housed within the central opening and having at least two optical fibers supported therein, the multi-fiber ferrule being exposed at an opening at the first end of the ferrule holder, the opening at the first end being in communication with the central opening;

wherein the ferrule holder has a main body with a top side and a bottom side joined by two opposing side walls,

wherein a separation between the top side and the bottom side is more than a separation between the opposing side walls, the opposing side walls being parallel to a fiber alignment axis of the at least two optical fibers at an end face of the multi-fiber ferrule, and

wherein a front end of the ferrule holder has a lead-in;

a first projection on a first outside surface on the top side of the main body and extending longitudinally along the top side;

a second projection on a second outside surface on the bottom side of the main body and extending longitudinally along the bottom side,

wherein the first projection has a different shape than the second projection,

wherein the first and the second projections each have a vertical side surface to align the

ferrule holder with a vertical wall to control a horizontal direction of movement of the ferrule holder relative to an adapter; and

a latching mechanism on at least one of the top ~~surface~~ side and the bottom ~~surface~~ side,

wherein the latching mechanism is unconnected to the first projection and the second projection.

20. (Original) The fiber optic connector of claim 19, further comprising:

a boot extending in a rearward direction from the ferrule holder and supporting the at least two optical fibers.

21. (Currently Amended) A fiber optic connector for an MT-type ferrule, comprising:

a ferrule holder having a central opening extending longitudinally from a first end to a second end;

an MT-type ferrule housed within the central opening and having at least two optical fibers supported therein, the MT-type ferrule being exposed at an opening at the first end of the ferrule holder, the opening at the first end being in communication with the central opening;

a boot extending rearward of the ferrule holder and configured to support the at least two optical fibers,

wherein the ferrule holder has a main body with a top side and a bottom side joined by two opposing side walls,

wherein a separation between the top side and the bottom side is more than a separation between the opposing side walls, the opposing side walls being parallel to a fiber alignment axis of the at least two optical fibers at an end face of the MT-type ferrule, and

wherein a front end of the ferrule holder has a chamfer;

a first projection on a first outside surface on the top side of the main body and extending longitudinally along the top side;

a second projection on a second outside surface on the bottom side of the main body and extending longitudinally along the bottom side,

wherein the first projection has a different height or a different width than the second

projection; and

a latching mechanism on at least one of the top ~~surface~~ side and the bottom ~~surface~~ side,

wherein the latching mechanism is unconnected to the first projection and the second projection.

REMARKS

In the above-referenced Office Action, the Examiner objected to claims 1, 18, 19, and 21 because the Examiner alleged that the certain terms lacked an antecedent basis; and rejected claims 1-21 on the ground of non-statutory double patenting as being unpatentable over claims 1-17 of U.S. Patent No. 10,712,509. Applicant has amended claims 1, 11, 18, 19, and 21 to fix the antecedent basis issue. Applicant has also filed concurrently herewith a Terminal Disclaimer. As such, all requirements have been completed and the application should be passed to issuance without delay.

Respectfully submitted,

/Michael L. Leetzow/
Michael L. Leetzow PLLC
Registration No. 35,932
1205 S Keswick Dr.
Troy, VA 22974
Telephone: 407/302-9970

Date: November 27, 2023

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 18/483,949	Filing Date 10/10/2023	☐ To be Mailed

ENTITY: ☑ LARGE ☐ SMALL ☐ MICRO

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A		N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A		N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*		x $100 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $480 =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).				
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))					
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT	11/27/2023	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 21	Minus	** 21	= 0		x $100 =	0
	Independent (37 CFR 1.16(h))	* 4	Minus	*** 4	= 0		x $480 =	0
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	0

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=		x $0 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=		x $0 =	
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.	LIE
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".	/JACKIE A WHITE/
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".	
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.	

This collection of information is required by 37 CFR 1.16. 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 12 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, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PTO/AIA/26 (04-14)
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TERMINAL DISCLAIMER TO OBVIATE A DOUBLE PATENTING REJECTION OVER A "PRIOR" PATENT

Docket Number (Optional)
USCO-053-06

In re Application of: Hiep V. Nguyen; Darrell R. Childers; Michael E. Hughes; Jillcha Fekadu Wakjira;

Application No.: 18/483,949

Filed: 2023-10-10

For: Alignment Adapter and Alignment Design for a Connector Therefor

The applicant, US Conec Ltd., owner of 100 percent interest in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of **prior patent** No. 10,712,509 as the term of said **prior patent** is presently shortened by any terminal disclaimer. The applicant hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and the **prior patent** are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.

In making the above disclaimer, the applicant does not disclaim the terminal part of the term of any patent granted on the instant application that would extend to the expiration date of the full statutory term of the **prior patent**, "as the term of said **prior patent** is presently shortened by any terminal disclaimer," in the event that said **prior patent** later:

expires for failure to pay a maintenance fee;
is held unenforceable;
is found invalid by a court of competent jurisdiction;
is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321;
has all claims canceled by a reexamination certificate;
is reissued; or
is in any manner terminated prior to the expiration of its full statutory term as presently shortened by any terminal disclaimer.

Check either box 1 or 2 below, if appropriate.

1. ☐ The undersigned is the applicant. If the applicant is an assignee, the undersigned is authorized to act on behalf of the assignee.

I hereby acknowledge that any willful false statements made are punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

2. ☑ The undersigned is an attorney or agent of record. Reg. No. 35932

Michael L Leetzow/ — Signature
2023-11-27 — Date

Michael L. Leetzow — Typed or printed name

Patent Practitioner — Title
407 302 9970 — Telephone Number

☑ Terminal disclaimer fee under 37 CFR 1.20(d) included.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

A Federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with an information collection subject to the requirements of the Paperwork Reduction Act of 1995, unless the information collection has a currently valid OMB Control Number. The OMB Control Number for this information collection is 0651-0031. Public burden for this form is estimated to average 12 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection. Send comments regarding this burden estimate or any other aspect of this information collection, including suggestions for reducing this burden to the Chief Administrative Officer, United States Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450 or email InformationCollection@uspto.gov. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **If filing this completed form by mail, send to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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Doc Code: PA..
Document Description: Power of Attorney

PTO/AIA/82A (07-13)
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TRANSMITTAL FOR POWER OF ATTORNEY TO ONE OR MORE REGISTERED PRACTITIONERS

NOTE: This form is to be submitted with the Power of Attorney by Applicant form (PTO/AIA/82B) to identify the application to which the Power of Attorney is directed, in accordance with 37 CFR 1.5, unless the application number and filing date are identified in the Power of Attorney by Applicant form. If neither form PTO/AIA/82A nor form PTO/AIA82B identifies the application to which the Power of Attorney is directed, the Power of Attorney will not be recognized in the application.

Application Number	18/483,949
Filing Date	2023-10-10
First Named Inventor	Hiep V. Nguyen
Title	Alignment Adapter and Alignment Design for a Connector Therefor
Art Unit	OPAP
Examiner Name	Docket CENTRAL
Attorney Docket Number	USCO-053-06

SIGNATURE of Applicant or Patent Practitioner

Signature	/Michael L. Leetzow/	Date (Optional)	2023-11-21
Name	Michael L. Leetzow	Registration Number	35932
Title (if Applicant is a juristic entity)	Patent Practitioner		
Applicant Name (if Applicant is a juristic entity)	US Conec Ltd.		

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. If more than one applicant, use multiple forms.

☐ *Total of _____ forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. 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 1.11 and 1.14. This collection is estimated to take 3 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, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(c).

I hereby appoint:

■ Practitioners associated with Customer Number: 152017

OR

☐ Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

Name	Registration Number	Name	Registration Number

As attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignments documents attached to this form in accordance with 37 CFR 3.73(c).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(c) to:

■ The address associated with Customer Number: 152017

OR

☐

Firm or Individual Name			
Address			
City		State	Zip
Country			
Telephone		Email	

Assignee Name and Address: US Conec, Ltd.
1138 25th Street SE
Hickory, NC 28603

A copy of this form, together with a statement under 37 CFR 3.73(c) (Form PTO/AIA/96 or equivalent) is required to be Filed in each application in which this form is used. The statement under 37 CFR 3.73(c) may be completed by one of The practitioners appointed in this form, and must identify the application in which this Power of Attorney is to be filed.

SIGNATURE of Assignee of Record

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

Signature		Date	
Name	Joseph L. Graham	Telephone	828 267 6323
Title	President		

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. 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 1.11 and 1.14. This collection is estimated to take 3 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, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
Alexandria, VA 22313 - 1450
www.uspto.gov

ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/483,949	**11/21/2023 03:21:56 PM Z ET**	**USCO-053-06**

Title of Invention

Alignment Adapter and Alignment Design for a Connector Therefor

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	1038	FILED BY	Michael Leetzow
PATENT CENTER #	63342875	FILING DATE	10/10/2023
CUSTOMER #	152017	FIRST NAMED INVENTOR	Hiep V. Nguyen
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	-

Documents

TOTAL DOCUMENTS: 2

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
Assignee Statement.pdf	2	Assignee showing of ownership per 37 CFR 3.73	134 KB
POA.pdf	2	Power of Attorney	273 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
Assignee Statement.pdf	611F9C1695ECBE7E39B08A801F6B1DE533CF0BA819A1D843B EC3C43E65833615AD9205572F2E3B05380056E1CFD6A2E3672 9D7DF10A5BD760A6EABA3877D8150

POA.pdf 437D9FBD79151016F2839942201DD8233E4354A4505BC55DAA
8A8F5EDAB76A13F9BC94E9FACA6F6AAFDBB12E99E5F34414
757F452BAF69F679DE9DFC7BE8FFF1

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 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.

PTO/AIA/96 (08-12)
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STATEMENT UNDER 37 CFR 3.73(c)

Applicant/Patent Owner: US Conec Ltd.

Application No./Patent No.: 18/483,949 Filed/Issue Date: 2023-10-10

Titled: Alignment Adapter and Alignment Design for a Connector Therefor

US Conec Ltd., a _____

(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose **one** of options 1, 2, 3 or 4 below):

1. [x] The assignee of the entire right, title, and interest.

2. [ ] An assignee of less than the entire right, title, and interest (check applicable box):

   [ ] The extent (by percentage) of its ownership interest is _____%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.

   [ ] There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

   Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. [ ] The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

   Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. [ ] The recipient, via a court proceeding or the like (*e.g.*, bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose **one** of options A or B below):

A. [x] An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel 060697, Frame 0494, or for which a copy thereof is attached.

B. [ ] A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

   1. From: _____ To: _____

      The document was recorded in the United States Patent and Trademark Office at

      Reel _____, Frame _____, or for which a copy thereof is attached.

   2. From: _____ To: _____

      The document was recorded in the United States Patent and Trademark Office at

      Reel _____, Frame _____, or for which a copy thereof is attached.

This collection of information is required by 37 CFR 3.73(b). 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 1.11 and 1.14. This collection is estimated to take 12 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, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450**.

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STATEMENT UNDER 37 CFR 3.73(c)

3. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

4. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

5. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

6. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet(s).

☐ As required by 37 CFR 3.73(c)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/Michael L. Leetzow/	2023-11-21
Signature	Date
Michael L. Leetzow	35932
Printed or Typed Name	Title or Registration Number

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/483,949	10/10/2023	Hiep V. Nguyen	USCO-053-06	1038

152017 7590 11/21/2023

US Conec Ltd.
1138 25th Street Southeast
Hickory, NC 28602

EXAMINER
ROJAS, OMAR R

ART UNIT	PAPER NUMBER
2874	

NOTIFICATION DATE	DELIVERY MODE
11/21/2023	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):

docket@usconec.com
eofficeaction@appcoll.com
michael@leetzow.com

Office Action Summary	Application No. 18/483,949	Applicant(s) Nguyen et al.	
	Examiner Omar R Rojas	Art Unit 2874	AIA (FITF) Status No

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

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL.** 2b) ☑ This action is non-final.

3)☐ 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.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☑ Claim(s) 1-21 is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6) ☐ Claim(s) _____ is/are allowed.

7) ☑ Claim(s) 1-21 is/are rejected.

8) ☐ Claim(s) _____ is/are objected to.

9) ☐ Claim(s) _____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, 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.**

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☑ The drawing(s) filed on October 10, 2023 is/are: a)☑ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ 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)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☑ Notice of References Cited (PTO-892)

2) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

DETAILED ACTION

Notice of Pre-AIA or AIA Status

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

Claim Objections

2. Claims 1, 18, 19, and 21 are objected to because of the following informalities: In each of claims 1, 18, 19, and 21, the limitations "the top surface" and "the bottom surface" in the third to last line of each claim lack a clear antecedent basis. Appropriate correction is required.

3. For purposes of examination, the aforementioned limitation "the top surface" has been interpreted as referring to the "first outside surface" mentioned in the claims and the aforementioned "the bottom surface" has been interpreted as referring to the "second outside surface" also mentioned in the claims.

Double Patenting

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on nonstatutory double patenting provided the reference application or patent either is shown to be commonly owned with the examined application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement. See MPEP § 717.02 for applications subject to examination under the first inventor to file provisions of the AIA as explained in MPEP § 2159. See MPEP § 2146 *et seq.* for applications not subject to examination under the first inventor to file provisions of the AIA. A terminal disclaimer must be signed in compliance with 37 CFR 1.321(b).

The filing of a terminal disclaimer by itself is not a complete reply to a nonstatutory double patenting (NSDP) rejection. A complete reply requires that the terminal disclaimer be accompanied by a reply requesting reconsideration of the prior Office action. Even where the NSDP rejection is provisional the reply must be complete. See MPEP § 804, subsection I.B.1. For a reply to a non-final Office action, see 37 CFR 1.111(a). For a reply to final Office action, see 37 CFR 1.113(c). A request for reconsideration while not provided for in 37 CFR 1.113(c) may be filed after final for consideration. See MPEP §§ 706.07(e) and 714.13.

The USPTO Internet website contains terminal disclaimer forms which may be used. Please visit www.uspto.gov/patent/patents-forms. The actual filing date of the application in which the form is filed determines what form (e.g., PTO/SB/25, PTO/SB/26, PTO/AIA/25, or PTO/AIA/26) should be used. A web-based eTerminal Disclaimer may be filled out completely online using web-screens. An eTerminal Disclaimer that meets all requirements is auto-processed and approved immediately upon submission. For more information about eTerminal Disclaimers, refer to www.uspto.gov/patents/apply/applying-online/eterminal-disclaimer.

5. **Claims 1-21 are rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1-17 of U.S. Patent No. 10,712,509 (hereinafter "the '509 patent").** Although the claims at issue are not identical, they are not patentably distinct from each other because both sets of claims are directed to the same underlying embodiment and the same disclosure, i.e., the ferrule holder shown in Figures 5A-5C of the drawings. Claims 1-17 of the '509 patent only differ from pending claims 1-21 in that the patented claims do not recite all of the additional aspects recited in pending claims 1-21. It would have been obvious to one of ordinary skill in the art before the effective filing date to modify the invention of claims 1-17 of the '509 patent to include additional unclaimed aspects from the underlying embodiment of the patented claims, thereby obtaining the invention specified by pending claims 1-21. Therefore, it would have been obvious to one of ordinary skill in the art before the effective filing date to obtain the invention specified by claims 1-21 in view of claims 1-17 of the '509 patent.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Omar R. Rojas whose telephone number is (571)272-2357. The examiner can normally be reached on Monday-Friday, 10AM-6PM EST.

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, Thomas Hollweg can be reached on 571-270-1739. 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.

/Omar R Rojas/
Primary Examiner
Art Unit 2874

or
November 16, 2023

Notice of References Cited	Application/Control No. 18/483,949	Applicant(s)/Patent Under Reexamination Nguyen et al.	
	Examiner Omar R Rojas	Art Unit 2874	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-10712509-B2	07-2020	Nguyen; Hiep V.	G02B6/3879	1/1
	B					
	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.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/483,949	Nguyen et al.
	Examiner	Art Unit
	Omar R Rojas	2874

CPC - Searched*		
Symbol	Date	Examiner
G02B6/3879,3881,3885,3893	11/15/2023	/ORR/

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
Updated previous EAST search from related application 15/855,788 - See PE2E Search History Printout.	11/15/2023	/ORR/

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
PGPUB, USPAT - text search	See PE2E Search History printout.	11/15/2023	/ORR/

/Omar R Rojas/ Primary Examiner, Art Unit 2874	

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Senko Advanced Components v. US Conec Ltd.
IPR2024-00805

PE2E SEARCH - Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
L775	61	L638 and L640	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/11/15 03:51 PM
L776	22	L642 and L639	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/11/15 03:51 PM
L777	29	ferrule.ti,ab,clm. and L640	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/11/15 03:51 PM
L778	51	L640 and ferrule	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/11/15 03:51 PM
L779	179	L642 and L649	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/11/15 03:51 PM
L780	104	("20050281509" | "20060063436" | "20100266245" | "4111522" | "5082346" | "5093881" | "5155784" | "5276755" | "5647043" | "5689598" | "5692079" | "5838856" | "6095695" | "6422760" | "7785018").PN. OR ("2005/0281509" | "6095695" | "9086546").URPN.	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2023/11/15 03:52 PM
L781	315	L658 and g02b6/$.cpc.	(US-PGPUB; USPAT)	OR	ON	ON	2023/11/15 03:52 PM
L782	151	("4526430" | "4550362" | "4647130" | "4767179" | "5082344" | "5121454" | "5125056" | "5228865" | "5257947" | "5542015" | "5619604" | "5764834" | "5845027" | "5960138" | "6007256" | "6050845" | "6076975" | "6146023" | "6331079").PN. OR ("6331079" | "6361218" | "6364536" | "6406192" | "6422760").URPN.	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2023/11/15 03:54 PM
L783	745	G02B6/3879.cpc. and G02B6/3885.cpc.	(US-PGPUB; USPAT; EPO; JPO;	OR	OFF	OFF	2023/11/15 03:54 PM

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Senko Advanced Components v. US Conec Ltd.
IPR2024-00805

			DERWENT; IBM_TDB)				
L784	360	G02B6/3878.cpc. and G02B6/3885.cpc.	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2023/11/15 03:54 PM
L785	302	L675 and G02B6/3885.cpc.	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2023/11/15 03:55 PM
L786	196	G02B6/3879.cpc. and L678	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2023/11/15 03:55 PM
L787	383	L681 and L682	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/11/15 03:55 PM
L789	547	G02B6/3897.cpc. and L682	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2023/11/15 03:58 PM
L790	1720	G02B6/3825.cpc. and G02B6/3885.cpc.	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2023/11/15 03:58 PM
L791	61	L698 and L700	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/11/15 03:58 PM
L792	22	L702 and L699	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/11/15 03:58 PM
L793	29	ferrule.ti,ab,clm. and L700	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/11/15 03:59 PM
L794	51	L700 and ferrule	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/11/15 03:59 PM
L795	179	L702 and L709	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/11/15 03:59 PM
L796	151	("4526430" | "4550362" | "4647130" | "4767179" | "5082344" | "5121454" | "5125056" | "5228865" | "5257947" | "5542015" | "5619604" | "5764834" | "5845027" | "5960138" | "6007256" | "6050845" | "6076975" | "6146023" | "6331079").PN. OR ("6331079" | "6361218" | "6364536" | "6406192" | "6422760").URPN.	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2023/11/15 03:59 PM
L797	745	G02B6/3879.cpc. and G02B6/3885.cpc.	(US-PGPUB; USPAT; EPO; JPO;	OR	OFF	OFF	2023/11/15 04:00 PM

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Senko Advanced Components v. US Conec, Ltd.
IPR2024-00805

			DERWENT; IBM_TDB)				
L798	360	G02B6/3878.cpc. and G02B6/3885.cpc.	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2023/11/15 04:00 PM
L799	302	L735 and G02B6/3885.cpc.	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2023/11/15 04:00 PM
L800	196	G02B6/3879.cpc. and L738	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2023/11/15 04:00 PM
L801	383	L741 and L742	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/11/15 04:00 PM
L802	1345	G02B6/3897.cpc. and G02B6/3885.cpc.	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2023/11/15 04:01 PM
L803	547	G02B6/3897.cpc. and L742	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2023/11/15 04:01 PM
L804	1720	G02B6/3825.cpc. and G02B6/3885.cpc.	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2023/11/15 04:01 PM
L805	1781	G02B6/3879.cpc.	(US-PGPUB; USPAT; EPO; JPO)	OR	OFF	OFF	2023/11/15 04:01 PM
L806	3925	G02B6/3893.cpc.	(US-PGPUB; USPAT; EPO; JPO)	OR	OFF	OFF	2023/11/15 04:01 PM
L807	361	G02B6/3881.cpc.	(US-PGPUB; USPAT; EPO; JPO)	OR	OFF	OFF	2023/11/15 05:49 PM
L808	5325	G02B6/3885.cpc.	(US-PGPUB; USPAT; EPO; JPO)	OR	OFF	OFF	2023/11/15 05:50 PM
L809	4096	808 NOT (805 806)	(US-PGPUB; USPAT; EPO; JPO)	OR	OFF	OFF	2023/11/15 05:51 PM

PE2E SEARCH - Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
N775	4	(holder AND ferrule AND projection AND latch$3 AND shape).clm.	(US-PGPUB; USPAT)	OR	OFF	OFF	2023/11/15 06:00 PM

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Senko Advanced Components v. US Conec Ltd.
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/483,949	10/10/2023	Hiep V. Nguyen	USCO-053-06	1038

152017 7590 11/02/2023

US Conec Ltd.
1138 25th Street Southeast
Hickory, NC 28602

EXAMINER
CENTRAL, DOCKET

ART UNIT	PAPER NUMBER
OPAP	

NOTIFICATION DATE	DELIVERY MODE
11/02/2023	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):

docket@usconec.com
eofficeaction@appcoll.com
michael@leetzow.com

Decision Granting Request for Prioritized Examination (Track I)	**Application No.** 18/483,949	**Applicant(s)** Nguyen et al.	
	Examiner CHERYL P GIBSON BAYLOR	**Art Unit** OPET	**AIA (FITF) Status** No

1. THE REQUEST FILED 10 October 2023 IS **GRANTED** .

   The above-identified application has met the requirements for prioritized examination
   - A. ☑ for an original nonprovisional application (Track I).
   - B. ☐ for an application undergoing continued examination (RCE).

2. **The above-identified application will undergo prioritized examination**. The application will be accorded special status throughout its entire course of prosecution until one of the following occurs:
   - A. filing a **petition for extension of time** to extend the time period for filing a reply;
   - B. filing an **amendment to amend the application to contain more than four independent claims, more than thirty total claims** , or a multiple dependent claim;
   - C. filing a **request for continued examination** ;
   - D. filing a notice of appeal;
   - E. filing a request for suspension of action;
   - F. mailing of a notice of allowance;
   - G. mailing of a final Office action;
   - H. completion of examination as defined in 37 CFR 41.102; or
   - I. abandonment of the application.

Telephone inquiries with regard to this decision should be directed to CHERYL GIBSON BAYLOR at (571)272-3213. In his/her absence, calls may be directed to Petition Help Desk at (571) 272-3282.

/CHERYL GIBSON BAYLOR/ Paralegal Specialist, OPET	

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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
18/483,949	10/10/2023		2400	USCO-053-06	21	4

CONFIRMATION NO. 1038

FILING RECEIPT

152017
US Conec Ltd.
1138 25th Street Southeast
Hickory, NC 28602

OC00000063656809

Date Mailed: 10/24/2023

Receipt is acknowledged of this non-provisional utility patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF FIRST INVENTOR, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection.

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Inventor(s)

Hiep V. Nguyen, Fort Mill, SC;
Darrell R. Childers, Hickory, NC;
Michael E. Hughes, Hickory, NC;
Jillcha Fekadu Wakjira, Hickory, NC;
Joseph P. Howard, Hickory, NC;

Applicant(s)

US Conec Ltd., Hickory, NC;

Power of Attorney: None

Domestic Priority data as claimed by applicant

This application is a CON of 17/857,300 07/05/2022
which is a CON of 17/145,864 01/11/2021 PAT 11,385,415
which is a CON of 16/214,317 12/10/2018 PAT 10,890,723
which is a CON of 15/855,750 12/27/2017 PAT 10,156,684
which is a DIV of 14/214,931 03/15/2014 PAT 9,857,538
which claims benefit of 61/789,499 03/15/2013

Foreign Applications for which priority is claimed (You may be eligible to benefit from the Patent Prosecution Highway program at the USPTO. Please see http://www.uspto.gov for more information.) - None.
Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 10/23/2023
The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 18/483,949**
Projected Publication Date: 02/01/2024
Non-Publication Request: No
Early Publication Request: No
Title

Alignment Adapter and Alignment Design for a Connector Therefor

Preliminary Class

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

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Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

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Senko Advanced Components v. US Conec Ltd.
IPR2024-00805

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 18/483,949

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY FEE($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	320
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	700
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	800
TOTAL CLAIMS (37 CFR 1.16(i))	21 minus 20 =	* 1			OR	x 100 =	100
INDEPENDENT CLAIMS (37 CFR 1.16(h))	4 minus 3 =	* 1				x 480 =	480
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						0
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							0
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	2400

APPLICATION AS AMENDED - PART II

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT A	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE($)	ADDITIONAL FEE($)		RATE($)	ADDITIONAL FEE($)
AMENDMENT B	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.

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Kathi Vidal
Under Secretary of Commerce for Intellectual Property and
Director of the United States Patent and Trademark Office

Derrick Brent
Deputy Under Secretary of Commerce for Intellectual Property and
Deputy Director of the United States Patent and Trademark Office

Doc Code: TRACK1.REQ
Document Description: TrackOne Request

PTO/AIA/424 (04-14)

CERTIFICATION AND REQUEST FOR PRIORITIZED EXAMINATION UNDER 37 CFR 1.102(e) (Page 1 of 1)

First Named Inventor:	Hiep V. Nguyen	Nonprovisional Application Number (if known):	
Title of Invention:	Alignment Adapter and Alignment Design for a Connector Therefor		

APPLICANT HEREBY CERTIFIES THE FOLLOWING AND REQUESTS PRIORITIZED EXAMINATION FOR THE ABOVE-IDENTIFIED APPLICATION.

1. The processing fee set forth in 37 CFR 1.17(i)(1) and the prioritized examination fee set forth in 37 CFR 1.17(c) have been filed with the request. The publication fee requirement is met because that fee, set forth in 37 CFR 1.18(d), is currently $0. The basic filing fee, search fee, and examination fee are filed with the request or have been already been paid. I understand that any required excess claims fees or application size fee must be paid for the application.

2. I understand that the application may not contain, or be amended to contain, more than four independent claims, more than thirty total claims, or any multiple dependent claims, and that any request for an extension of time will cause an outstanding Track I request to be dismissed.

3. The applicable box is checked below:

I. ☑ Original Application (Track One) - Prioritized Examination under § 1.102(e)(1)

i. (a) The application is an original nonprovisional utility application filed under 35 U.S.C. 111(a). This certification and request is being filed with the utility application via EFS-Web.

---OR---

(b) The application is an original nonprovisional plant application filed under 35 U.S.C. 111(a). This certification and request is being filed with the plant application in paper.

ii. An executed inventor's oath or declaration under 37 CFR 1.63 or 37 CFR 1.64 for each inventor, **or** the application data sheet meeting the conditions specified in 37 CFR 1.53(f)(3)(i) is filed with the application.

II. ☐ Request for Continued Examination - Prioritized Examination under § 1.102(e)(2)

i. A request for continued examination has been filed with, or prior to, this form.
ii. If the application is a utility application, this certification and request is being filed via EFS-Web.
iii. The application is an original nonprovisional utility application filed under 35 U.S.C. 111(a), or is a national stage entry under 35 U.S.C. 371.
iv. This certification and request is being filed prior to the mailing of a first Office action responsive to the request for continued examination.
v. No prior request for continued examination has been granted prioritized examination status under 37 CFR 1.102(e)(2).

Signature /Michael L. Leetzow/	Date 2023-10-12
Name (Print/Typed) Michael L. Leetzow	Practitioner Registration Number 35932

Note: *This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. Submit multiple forms if more than one signature is required.**

☑ *Total of 1 forms are submitted.

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.

UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
Alexandria, VA 22313 - 1450
www.uspto.gov

ELECTRONIC PAYMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/483,949	**10/10/2023 03:17:45 PM ET**	**USCO-053-06**

Title of Invention

Alignment Adapter and Alignment Design for a Connector Therefor

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	1038	FILED BY	Michael Leetzow
PATENT CENTER #	62964286	AUTHORIZED BY	-
CUSTOMER #	152017	FILING DATE	-
CORRESPONDENCE ADDRESS	-	FIRST NAMED INVENTOR	Hiep V. Nguyen

Payment Information

PAYMENT METHOD	PAYMENT TRANSACTION ID	PAYMENT AUTHORIZED BY
CARD / 1000	**E202300F19295010**	**Michael Leetzow**

FEE CODE	DESCRIPTION	ITEM PRICE($)	QUANTITY	ITEM TOTAL($)
1830	PROCESSING FEE, EXCEPT IN PROVISIONAL APPLICATIONS	140.00	1	140.00
1817	REQUEST FOR PRIORITIZED EXAMINATION	4200.00	1	4200.00
1111	UTILITY PATENT APPL. SEARCH FEE	700.00	1	700.00
1011	BASIC FILING FEE - UTILITY (PAPER FILING ALSO REQUIRES NON-ELECTRONIC FILING FEE UNDER 1.16(T))	320.00	1	320.00
1311	PATENT APPL. EXAMINATION FEE	800.00	1	800.00

1202	EACH CLAIM IN EXCESS OF 20	100.00	1	100.00
1201	EACH INDEPENDENT CLAIM IN EXCESS OF THREE	480.00	1	480.00
			TOTAL AMOUNT:	**$6,740.00**

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 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.

PTO/AIA/14 (01-22)
Approved for use through 05/31/2024. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	USCO-053-06
	Application Number	
Title of Invention	Alignment Adapter and Alignment Design for a Connector Therefor	

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

Secrecy Order 37 CFR 5.2:

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Inventor Information:

Inventor 1 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Hiep	V.	Nguyen	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	Fort Mill	State/Province	SC	Country of Residence	US

Mailing Address of Inventor:

Address 1	1102 Queen Anne's Cove
Address 2	

City	Fort Mill	State/Province	SC
Postal Code	29708	Country	US

Inventor 2 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Darrell	R.	Childers	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	Hickory	State/Province	NC	Country of Residence	US

Mailing Address of Inventor:

Address 1	364 6th St. NW
Address 2	

City	Hickory	State/Province	NC
Postal Code	28601	Country	US

Inventor 3 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Michael	E.	Hughes	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	USCO-053-06
	Application Number	
Title of Invention	Alignment Adapter and Alignment Design for a Connector Therefor	

City	Hickory	State/Province	NC	Country of Residence	US

Mailing Address of Inventor:

Address 1	850 16th Ave Ln. NW		
Address 2			
City	Hickory	State/Province	NC
Postal Code	28601	Country	US

Inventor 4 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Jillcha	Fekadu	Wakjira	

Residence Information (Select One) (•) US Residency ( ) Non US Residency ( ) Active US Military Service

City	Hickory	State/Province	NC	Country of Residence	US

Mailing Address of Inventor:

Address 1	2032 19th Ave Cir NE		
Address 2			
City	Hickory	State/Province	NC
Postal Code	28601	Country	US

Inventor 5 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Joseph	P.	Howard	

Residence Information (Select One) (•) US Residency ( ) Non US Residency ( ) Active US Military Service

City	Hickory	State/Province	NC	Country of Residence	US

Mailing Address of Inventor:

Address 1	1363 Homestead Dr.		
Address 2			
City	Hickory	State/Province	NC
Postal Code	28602	Country	US

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button. Add

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below.
For further information see 37 CFR 1.33(a).

☐ **An Address is being provided for the correspondence Information of this application.**

Senko Ex. 1018, Page 103
Senko Advanced Components v. US Conec Ltd.
IPR2024-00805

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	USCO-053-06
	Application Number	
Title of Invention	Alignment Adapter and Alignment Design for a Connector Therefor	

Customer Number	152017		
Email Address	michael@leetzow.com	Add Email	Remove Email
Email Address	ssengupta@usconec.com	Add Email	Remove Email

Application Information:

Title of the Invention	Alignment Adapter and Alignment Design for a Connector Therefor		
Attorney Docket Number	USCO-053-06	**Small Entity Status Claimed**	☐
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	10	**Suggested Figure for Publication (if any)**	

Filing By Reference:

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32).
Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:	◉ Customer Number	○ US Patent Practitioner	○ Limited Recognition (37 CFR 11.9)
Customer Number	152017		

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	USCO-053-06
	Application Number	
Title of Invention	Alignment Adapter and Alignment Design for a Connector Therefor	

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim information in the Application Data Sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.
When referring to the current application, please leave the "Application Number" field blank.

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation of	17857300	2022-07-05

Prior Application Status	Patented				Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
17857300	Continuation of	17145864	2021-01-11	11385415	2022-07-12

Prior Application Status	Patented				Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
17145864	Continuation of	16214317	2018-12-10	10890723	2021-01-12

Prior Application Status	Patented				Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
16214317	Continuation of	15855750	2017-12-27	10156684	2018-12-18

Prior Application Status	Patented				Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
15855750	Division of	14214931	2014-03-15	9857538	2018-01-02

Prior Application Status	Expired		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
14214931	Claims benefit of provisional	61789499	2013-03-15

Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button. Add

Foreign Priority Information:

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	USCO-053-06
	Application Number	
Title of Invention	Alignment Adapter and Alignment Design for a Connector Therefor	

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)[i] the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

Remove

Application Number	Country[i]	Filing Date (YYYY-MM-DD)	Access Code[i] (if applicable)

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button. Add

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.
NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	USCO-053-06
	Application Number	
Title of Invention	Alignment Adapter and Alignment Design for a Connector Therefor	

Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

NOTE: This section of the Application Data Sheet is **ONLY** reviewed and processed with the **INITIAL** filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)

A. Priority Document Exchange (PDX) - Unless box A in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (SIPO), the World Intellectual Property Organization (WIPO), and any other foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement in which a foreign application claiming priority to the instant patent application is filed, access to: (1) the instant patent application-as-filed and its related bibliographic data, (2) any foreign or domestic application to which priority or benefit is claimed by the instant application and its related bibliographic data, and (3) the date of filing of this Authorization. See 37 CFR 1.14(h)(1).

B. Search Results from U.S. Application to EPO - Unless box B in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the EPO access to the bibliographic data and search results from the instant patent application when a European patent application claiming priority to the instant patent application is filed. See 37 CFR 1.14(h)(2).

The applicant is reminded that the EPO's Rule 141(1) EPC (European Patent Convention) requires applicants to submit a copy of search results from the instant application without delay in a European patent application that claims priority to the instant application.

2. Opt-Out of Authorizations to Permit Access by a Foreign Intellectual Property Office(s)

☐ A. Applicant **DOES NOT** authorize the USPTO to permit a participating foreign IP office access to the instant application-as-filed. If this box is checked, the USPTO will not be providing a participating foreign IP office with any documents and information identified in subsection 1A above.

☐ B. Applicant **DOES NOT** authorize the USPTO to transmit to the EPO any search results from the instant patent application. If this box is checked, the USPTO will not be providing the EPO with search results from the instant application.

NOTE: Once the application has published or is otherwise publicly available, the USPTO may provide access to the application in accordance with 37 CFR 1.14.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	USCO-053-06
	Application Number	
Title of Invention	Alignment Adapter and Alignment Design for a Connector Therefor	

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Applicant 1 Remove

If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.

Clear

◉ Assignee	○ Legal Representative under 35 U.S.C. 117	○ Joint Inventor
○ Person to whom the inventor is obligated to assign.	○ Person who shows sufficient proprietary interest	

If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:

Name of the Deceased or Legally Incapacitated Inventor:

If the Applicant is an Organization check here. ☒

Organization Name	US Conec Ltd.		
Mailing Address Information For Applicant:			
Address 1	1138 25th Street SE		
Address 2			
City	Hickory	**State/Province**	NC
Country	US	Postal Code	28603
Phone Number		Fax Number	
Email Address	ssengupta@usconec.com		

Additional Applicant Data may be generated within this form by selecting the Add button. Add

Assignee Information including Non-Applicant Assignee Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

PTO/AIA/14 (01-22)
Approved for use through 05/31/2024. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	USCO-053-06
	Application Number	
Title of Invention	Alignment Adapter and Alignment Design for a Connector Therefor	

Assignee 1

Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.

Remove

If the Assignee or Non-Applicant Assignee is an Organization check here. ☐

Prefix	**Given Name**	Middle Name	**Family Name**	Suffix

Mailing Address Information For Assignee including Non-Applicant Assignee:

Address 1			
Address 2			
City		**State/Province**	
Country i		Postal Code	
Phone Number		Fax Number	
Email Address			

Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button. Add

Signature:

Remove

NOTE: This Application Data Sheet must be signed in accordance with 37 CFR 1.33(b). **However, if this Application Data Sheet is submitted with the INITIAL filing of the application and either box A or B is not checked in subsection 2 of the "Authorization or Opt-Out of Authorization to Permit Access" section, then this form must also be signed in accordance with 37 CFR 1.14(c).**

This Application Data Sheet **must** be signed by a patent practitioner if one or more of the applicants is a **juristic entity** (e.g., corporation or association). If the applicant is two or more joint inventors, this form must be signed by a patent practitioner, **all** joint inventors who are the applicant, or one or more joint inventor-applicants who have been given power of attorney (e.g., see USPTO Form PTO/AIA/81) on behalf of **all** joint inventor-applicants.

See 37 CFR 1.4(d) for the manner of making signatures and certifications.

Signature	/Michael L. Leetzow/			Date (YYYY-MM-DD)	2023-10-10
First Name	Michael	Last Name	Leetzow	Registration Number	35932

Additional Signature may be generated within this form by selecting the Add button. Add

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	USCO-053-06
	Application Number	
Title of Invention	Alignment Adapter and Alignment Design for a Connector Therefor	

This collection of information is required by 37 CFR 1.76. 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 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet 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, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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 the Freedom of Information Act requires disclosure of these records.

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 CooperationTreaty.

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APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
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Title of Invention

Alignment Adapter and Alignment Design for a Connector Therefor

Application Information

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CONFIRMATION #	1038	FILED BY	Michael Leetzow
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CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	-

Documents

TOTAL DOCUMENTS: 6

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
USCO-053-06_USPTO_AIA14_20231010_132024.pdf	10	Application Data Sheet	2225 KB
USCO-053-06_USPTO_AIA424_20231010_132016.pdf	2	Track One Request	131 KB
ApplicationUSCO-05306Final-APP.TEXT.docx	16	Application body structured text document	150 KB

Warning: One or more pages are missing page numbering. Page numbering will be automatically applied after submission.

SignedDeclarationUSC053.pdf	5	Oath or Declaration filed	656 KB
FinalDwgs05305.pdf	10	Drawings-only black and white line drawings	456 KB
ApplicationUSCO-05306Final.pdf	16	Auxiliary PDF of Application	260 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
USCO-053-06_USPTO_AIA14_20231010_132024.pdf	8A6C75D452378AFE9750B5310AE01397EAF56EF430CF4DE3B196B9DEA27A6753A4E42A35F6869FB155034959765FD15396FB059EA46FA81E7DAB9D277D5E4DA5
USCO-053-06_USPTO_AIA424_20231010_132016.pdf	6940B08B49ADB0409925F6FF5BEFA629056EBF95B395D8505283F261DD4441AF866D669FB694A55F81B0FB4ED43014E48DFB4E3B1E9FAD7667485AD1F9FF4252
ApplicationUSCO-05306Final-APP.TEXT.docx	B6E1A893F8880A66AC5D0D5B8E301CAC15D16DAFCE737ABC3690E6BC1EB7A4ECACBFD50C0E296834B88754F297C9CFCFCAA4F278D598894B0775A839391CC9F9
SignedDeclarationUSC053.pdf	4BB86F8BBACE9B9B5F2C5C4B1BAFB7A4CFD1B80B4D9FB374643D1832066A9FB32BBD86B442693B42801148157438BE57D97847ED876B1CFCB997AF2766141B41
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ApplicationUSCO-05306Final.pdf	2862970470FDFC7533D9F90239967D7A63C022DC50971021F9804DF5A19CB697E599857E7BBF707FD3AD3C35CC99131072A88F07DD9BC7E9F5D87FBB7AD0A2AC

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New International Application Filed with the USPTO as a Receiving Office

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ALIGNMENT ADAPTER AND ALIGNMENT DESIGN FOR A CONNECTOR THEREFOR

BACKGROUND OF THE INVENTION

REFERENCE TO RELATED CASE

[0001] This application claims priority under 35 U.S.C. § 119 (e) to provisional application no. 61/789,499 filed on March 15, 2013, claims priority to U.S. Patent Application No. 14/214,931 filed on March 15, 2014, now U.S. Patent No. 9,857,538, under 35 U.S.C. § 120, claims priority to U.S. Patent Application No. 15/855,750, filed on December 27, 2017, now U.S. Patent No. 10,156,684, under 35 U.S.C. § 120, and also to U.S. Patent Application No. 16/214,317, filed on December 10, 2018, to be issued as U.S. Patent No. 10,890,723, under 35 U.S.C. § 120, and to U.S. Patent Application No. 17/145,864, filed on January 11, 2021, now U.S. Patent No. 11,385,415, and to U.S. Patent Application No. 17/857,300, filed on July 5, 2022, the contents of which are hereby incorporated by reference in their entirety.

FIELD OF THE INVENTION

[0002] There is a need for fiber optic connectors with fiber optic ferrules that are ganged together with a tight pitch between those fiber optic ferrules. Such a design allows for many fiber optic ferrules to be connected simultaneously while occupying less space. In addition, it allows the fiber optic ferrules to be organized in a prearranged routing of the optical fibers so that the complexity of fiber optic connector routing is reduced for the user. Typically, these ganged fiber optic ferrules are mounted into a single housing and the housings are then mated to one another. The alignment between a pair of ferrules to be mated is complex and requires tight tolerances because there is a tolerance stack-up that includes the true position of the fiber optic ferrule relative to the housing. By requiring a tight tolerance of the housing relative to the fiber optic ferrule, the designs are expensive to design, maintain, and to scale to various fiber optic ferrule counts. It is also difficult to scale to very large arrays of fiber optic ferrules within one housing due to the true position tolerance required for every fiber optic ferrule to the housings and also the larger distances from the fiber optic ferrules to the housings.

[0003] An alternative way to align the ferrules to each other is to align the ferrule holders to one another through features in the adapter. Rather than using the sides of the ferrule

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holder to align the ferrule holder to the adapter, top and bottom keys on the ferrule holder align the ferrule holder relative to the adapter in the x-direction. The orientation of the ferrule holder is controlled by the width difference between the top and the bottom key. The height of the ferrule holder aligns the ferrule holder in the y direction. A plug is used to assemble a plurality of the ferrule holders together. The ferrule holders protrude through the plug so the ferrule holder features can be aligned in the adapter after the plug engages the adapter and aligns the ferrule holders with their own structures. The alignment in the X and Y directions between the ferrule holder and the adapter are maintained within 100 microns, preferably within 50 microns. The ferrule holders are relatively loosely held within the plug so as to not over constrain the ferrule holders in the adapter (greater than 100 microns). The grooves within the adapter that aligns the ferrule holders is one continuous feature for both sides of the adapter and the mating ferrule holders. By making the groove one continuous feature for both sides, the alignment the mating ferrule holders is guaranteed. The size of the groove is critical but the true position of the alignment feature relative to the adapter-to-plug alignment feature is not critical. By using this alignment mechanism, large arrays of ferrule holders can be manufactured. Only the size of the alignment mechanism in the ferrule holder and the size of the alignment mechanism in the adapter must be maintained. The true position tolerances are significantly reduced.

[0004] Thus, an adapter and adapter assembly with novel alignment features is provided to engage with alignment features on a plug, which is turn assists in aligning the ferrule holders with alignment grooves in the adapter.

SUMMARY OF THE INVENTION

[0005] The present invention is directed to an adapter for aligning fiber optic ferrules inserted from opposing sides that includes a main body having an opening extending between a first side and a second side, the first side and the second side separated by a central portion, at least one groove in a top surface and a bottom surface of the first side and the second side, and a plurality of grooves disposed in a top surface and the bottom surface of the central portion, each of the plurality of grooves extending through the central portion from the first side to the second side.

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[0006] According to another aspect of the present invention, adapter assembly for aligning one plurality of optical ferrules to another plurality of optical ferrules includes an adapter having an opening extending between a first side and a second side, the adapter having a plurality of grooves in the opening and extending in a direction from the first side to the second side, a plurality of ferrule holders, each of the plurality of ferrule holders having a central opening extending from a first end to a second end to resiliently retain a fiber optic ferrule therein, each of the plurality of ferrule holders having an opening in first end and in communication with the central opening, the second end opposite the first end and through which optical fibers extend, each of the plurality of ferrule holders having a projection on opposite outside surfaces to engage a corresponding groove in the adapter, and a plug having an outside surface and an inside surface, the inside surface defining an opening through the plug to hold a plurality of ferrule holders therein adjacent one another, the plug having grooves in the inside surface to engage the projections from the plurality of ferrule holders to align and orient the ferrule holders in the plug.

[0007] In yet another aspect, a ferrule holder includes a main body having a central opening to resiliently retain a fiber optic ferrule therein, a central opening in the main body and extending from a first end to a second end to resiliently retain a fiber optic ferrule therein, the first end having an opening therein and in communication with the central opening, the second end opposite the first end and through which optical fibers extend, and a projection on opposite outside surfaces of the main body to engage a corresponding groove in an adapter.

[0008] The present invention is also directed to a fiber optic connector that includes a plurality of ferrule holders, each of the plurality of ferrule holders having a central opening extending from a first end to a second end to resiliently retain a fiber optic ferrule therein, the ferrule holder having an opening in first end in communication with the central opening, the second end opposite the first end and through which optical fibers extend, each of the plurality of ferrule holders having a projection on opposite outside surfaces to engage a corresponding groove in the adapter, and a plug having an outside surface and an inside surface, the inside surface defining an opening through the plug to hold a plurality of ferrule holders therein adjacent one another, the plug having grooves in the inside surface to engage

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the projections from the plurality of ferrule holders to align and orient the ferrule holders in the plug.

[0009] Additional features and advantages of the invention will be set forth in the detailed description which follows, and in part will be readily apparent to those skilled in the art from that description or recognized by practicing the invention as described herein, including the detailed description which follows, the claims, as well as the appended drawings.

[00010] It is to be understood that both the foregoing general description and the following detailed description of the present embodiments of the invention, and are intended to provide an overview or framework for understanding the nature and character of the invention as it is claimed. The accompanying drawings are included to provide a further understanding of the invention, and are incorporated into and constitute a part of this specification. The drawings illustrate various embodiments of the invention and, together with the description, serve to explain the principles and operations of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[00011] Fig. 1 is a perspective view of one embodiment of an adapter assembly according to the present invention;

[00012] Fig. 2 is an exploded view of the adapter assembly of Fig. 1;

[00013] Fig. 3 is a perspective view of a cut-away view of the adapter of Fig. 1;

[00014] Fig. 4 is a front elevational view of the adapter of Fig 1.;

[00015] Fig. 5A is a top perspective view of one embodiment of a ferrule holder and ferrule that can be used in the adapter assembly of Fig. 1;

[00016] Fig. 5B is a bottom perspective view of the ferrule holder and ferrule of Fig. 5a;

[00017] Fig. 5C is a front view of the ferrule holder and ferrule of Fig. 5a;

[00018] Fig. 6A is a top perspective view of a plug and ferrule holders according to the present invention;

[00019] Fig. 6B is a bottom perspective view of the plug and ferrule holders of Fig. 6A;

[00020] Fig. 6C is a front elevational view of the plug and ferrule holders of Fig. 6A;

[00021] Fig. 7A is a partial cross sectional view of a portion of a ferrule holder of Fig. 5

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[00022] Fig. 7B is a partial cross sectional view of a portion of the center portion of the adapter;

[00023] Fig. 8 is a cross sectional view of the adapter assembly in the center of the adapter assembly; and

[00024] Fig. 9 is a cross sectional view of the adapter assembly through a ferrule holder and ferrule.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[00025] Reference will now be made in detail to the present preferred embodiment(s) of the invention, examples of which are illustrated in the accompanying drawings. Whenever possible, the same reference numerals will be used throughout the drawings to refer to the same or like parts.

[00026] Referring to Figs. 1 and 2, one embodiment of an adapter assembly **10** is illustrated. The adapter assembly **10** includes an adapter **100**, a plug **200** and a ferrule holder **300**. The adapter assembly **10** is used to align ferrules **12** to other ferrules in a tightly controlled manner and in a tighter space than has been possible before. The ferrules **12** are typically multi-fiber ferrules, particularly MT type ferrules, but the present invention may include other types of ferrules. The ferrules **12** are disposed within the ferrule holder **300** and have optical fibers **14** secured therein, which may be loose optical fibers, ribbonized optical fibers, or optical fibers in any other configuration. The ferrules **12** are resiliently held in the ferrule holders **300** using a spring push **16** that engages a spring **18**. The spring **18** then presses on a pin keeper **20**, as is known in the art, to bias the ferrules **12** forward in the ferrule holder **300**. As is described in more detail below, the ferrules **12** are held somewhat loosely within the ferrule holder **300** so that they can move relative to the ferrule holder **300** to align with other ferrules **12** that are inserted in the adapter **100** from the other side. Similarly, the ferrule holders **300** are inserted into the plug **200** and they are also loosely held in the plug **200**. That is, there is typically more than **100** microns of movement in the x and y directions (See Fig. 4.) available to the ferrule holder **300** in the plug **200**, as explained in more detail below.

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[00027] As illustrated in Figs. 5A-C, the ferrule holder **300** has a main body **302** with a central opening **304** that extends from a first end **306** to a second end **308** to house the fiber optic ferrules **12**. The first end **306** has an opening **310** therein to allow access to the ferrule **12**. The ferrule **12** may or may not exit the main body **302**. That is, the ferrule **12** may extend beyond the main body **302** as shown in the figures or it may be flush with the first end **306**. second end **308** allows for the optical fibers **14** (shown in Fig. 5A and 5B to have a boot and a covering) to exit the ferrule holder **300**. The ferrule holder **300** has a top surface **312** and a bottom surface **314**, with a cantilevered latch **316** to engage the plug **200**. The top surface **312** has a projection **320** and the bottom surface **314** has a projection **322**. The projections **320,322** are preferably elongated and have a chamfered front end. The projections **320,322** are used to engage grooves in the plug **200** and the adapter **100** to position the ferrule holders **300** with precision in the adapter **100**. The projection **320** has a width that is different that the width of projection **322** so as to act as a key in inserting the ferrule holder **300** in the plug **200**. While the projection **320** is wider than projection **322**, it could be opposite in that projection **320** is more narrow than projection **322**. The projections **320,322** are preferably on the top and the bottom surfaces **312,314** of the ferrule holder **300** to allow, as illustrated below, more ferrule holders to be inserted into the adapter **100** and the plug **200**. The projections **320,322** are used to position the ferrules **12** in the adapter in the x and y directions, eliminating the need for side walls to position the ferrule holders **300** and the ferrules **12**.

[00028] The plug **200** will now be described relative to Figs. 6A-6C. The plug **200** has an outside surface **202** and an inside surface **204**. The inside surface **204** defines an opening **206** therethrough to allow the ferrule holders **300** to be inserted therein. The inside surface **204** has a plurality of grooves **208** on a top side **210** and a corresponding plurality of grooves **212** on the bottom side **214**. The grooves **208** and **212** are dimensioned to accept the projections **320,322** from the ferrule holders **300**. It should be noted that the ferrule holders **300** are adjacent to one another, that is side-by-side without any material from the plug **200** therebetween. Applicant means that by using the term adjacent herein, there is no structure that comes between the neighboring ferrule holders **300**.

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[00029] The outside surface **202** also has a projection **220** on the top of the plug **200**, seen in Fig. 6A, and also a projection **222** on the bottom of the plug **200**, seen in Fig. 6B. Again, as with the projections **320,322**, projection **220** has a width that is different that the width of projection **222** so as to act as a key in inserting the plug **200** into the adapter **100**. While the projection **220** is narrower than projection **222**, it could be opposite in that projection **220** is wider than projection **222**.

[00030] The plug **200** also has two cantilevered latches **230** on the sides to engage corresponding structure on the adapter **100**. There are also latch receptacles **232** on the top side of the plug **200** to engage the latches **316** of the ferrule holders **300**.

[00031] As noted above, the grooves **208** and **212** in plug **200** are dimensioned to accept the projections **320,322** from the ferrule holders **300**. There is sufficient movement in the ferrule holders **300** relative to the plug **200** that when the plug **200** and ferrule holders **300** as assembled is inserted into the adapter **100**, that the ferrule holders **300** can move to allow the projections **320,322** from the ferrule holders **300** to engage corresponding grooves in the adapter **100** as described below in more detail.

[00032] Returning to Figs. 3 and 4, the adapter **100** is illustrated in more detail. The adapter **100** has a main body **102** with an opening **104** extending between a first side **106** and a second side **108**. The first side **106** and a second side **108** are separated by a central portion **110**. The first side **106** has a top surface **112** and a bottom surface **114**. The top surface **112** has a groove **116** and the bottom surface **114** has a groove **118**. The grooves **116,118** correspond to the projections **220,222** from the plug **200**. The location of the wider groove in the adapter **100** will correspond with the wider projection on the plug **200**.

[00033] The adapter has the center portion **110**. Center portion **110** preferably has a wall **130** that extends across the opening **104** in the adapter **100** and divides the center portion **110** in half. The center portion **110** also has a raised bottom portion **132** and a dropped top portion **134** that narrows the opening **104** in the center portion **110**. The wall **130** preferably extends from the raised bottom portion **132** and a dropped top portion **134** or it may be excluded completely if there is no EMI concerns with the adapter **100**. The wall **130** has a plurality of openings **136** that are sized to allow the ferrules **12** to pass therethrough to engage a corresponding ferrule **12**. As noted above, if the ferrules **12** only extend to the end

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of the ferrule holder **330**, then the openings **136** should be sized to allow the ferrule holders to also extend therethrough. The adapter **100** may also have an elastomeric gasket **150** that encircles an external surface of the adapter **100** to provide EMI shielding.

[00034] The raised bottom portion **132** and a dropped top portion **134** also have a plurality of grooves **140**, **142**, respectively, that extend completely across the central portion **110**. The grooves **140**, **142** are like those in the plug **200**, in that they are to engage the projections **320,322** from the ferrule holders **300**. The grooves **140**,**142** preferably extend completely across the center portion **110** as they are formed with the same insert in the mold. Therefore, the grooves **140**,**142** are sure to align the ferrule holders **300** on each side of the adapter **100** as they are inserted into the adapter **100**.

[00035] As the plug **200** with the ferrule holders **300** positioned therein are inserted into the adapter **100**, the projections **220,222** from the plug **200** engage the grooves **116,118** on the top surface **112** and the bottom surface **114** to roughly align the ferrule holders **300** with the center portion **110** and the plurality of grooves **140** in particular. Then, as the plug **200** is inserted farther into the adapter **100**, the projections **320,322** from the ferrule holders **300** engage plurality of grooves **140**, **142** to align the ferrule holders **300** with the adapter and the openings **136** in the wall **130**. When a plug **200** is inserted on the second side, the ferrules in the ferrule holders on the other side will be in alignment with the first side.

[00036] The position of the ferrule holders **300** on the first side **106** of the adapter relative to the ferrule holders **300** on the second side **108** is what allows the optical ferrules to be aligned with one another. There is no need, as discussed above, to worry about the stacking of tolerances as in the prior art. The positioning of the projections **320,322** on the ferrule holders **300** relative to the plurality of grooves **140**, **142** is important. With reference to Figs. 7A and 7B, the projections **320,322** are used to control the x and y locations of the ferrule holders **300**. The surfaces **340** of the projections **320,322** (Fig. 7A) align with the surfaces **150** in the adapter (Fig. 7B) to control the x direction of the ferrule holder **300** relative to the adapter **100**. The surfaces **352** of the ferrule holder **300** align with the surfaces **152** of the raised bottom portion **132** and the dropped top portion **134** of the center portion **110** to control the y direction of the ferrule holder **300** relative to the adapter **100**. The surfaces of

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the projections **320,322** could also align in the y direction, given that they are parallel to the surfaces **352**.

[00037] A cross section of the adapter assembly **10** is illustrated in Fig. 8 through the center of the adapter assembly. This illustrates the projections **220,200** in the openings **116,118** of the adapter **100**. Fig. 9 is a cross sectional view of the adapter assembly **10** through a ferrule holder and ferrule illustrating the engagement of the projections **320,322** in the openings **140**, **142**.

[00038] It will be apparent to those skilled in the art that various modifications and variations can be made to the present invention without departing from the spirit and scope of the invention. Thus it is intended that the present invention cover the modifications and variations of this invention provided they come within the scope of the appended claims and their equivalents.

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We claim:

1. A fiber optic connector for a multi-fiber ferrule, comprising:

a ferrule holder having a central opening extending longitudinally from a first end to a second end;

a multi-fiber ferrule housed within the central opening and having at least two optical fibers supported therein, the multi-fiber ferrule being exposed at an opening at the first end of the ferrule holder, the opening at the first end being in communication with the central opening;

a boot extending in a rearward direction from the ferrule holder and supporting the at least two optical fibers,

wherein the ferrule holder has a main body with a top side and a bottom side joined by two opposing side walls,

wherein a separation between the top side and the bottom side is more than a separation between the opposing side walls, the opposing side walls being parallel to a fiber alignment axis of the at least two optical fibers at an end face of the multi-fiber ferrule, and

wherein a front end of the ferrule holder has a lead-in or a chamfer;

a first projection on a first outside surface on the top side of the main body and extending longitudinally along the top side;

a second projection on a second outside surface on the bottom side of the main body and extending longitudinally along the bottom side,

wherein the first projection has a different shape than the second projection; and

a latching mechanism on at least one of the top surface and the bottom surface,

wherein the latching mechanism is unconnected to the first projection and the second projection.

2. The fiber-optic connector according to claim 1, wherein the multi-fiber ferrule is an MT type ferrule.

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3. The fiber-optic connector according to claim 1, wherein a top surface of the first projection is rearward of the front end of the ferrule holder.

4. The fiber-optic connector according to claim 1, wherein a horizontal top surface of the second projection is rearward of the front end of the ferrule holder.

5. The fiber-optic connector according to claim 1, wherein a top surface of each of the first projection and the second projection is rearward of the front end of the ferrule holder.

6. The fiber-optic connector according to claim 1, wherein the opposing sidewalls are smooth and solid.

7. The fiber-optic connector according to claim 1, wherein the opposing sidewalls are flat.

8. The fiber-optic connector according to claim 1, wherein the first projection and the second projection have different widths.

9. The fiber-optic connector according to claim 1, further comprising:
a spring positioned rearward of the multi-fiber ferrule and configured to bias the multi-fiber ferrule towards the front end of the ferrule holder.

10. The fiber-optic connector according to claim 9, wherein the spring at least partially surrounds the at least two optical fibers.

11. The fiber-optic connector according to claim 1, further comprising:
a cutout in each of the top surface and the bottom surface.

12. The fiber-optic connector according to claim 1, wherein a portion of the multi-fiber ferrule extends forward of the main body.

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13. The fiber-optic connector according to claim 1, wherein the multi-fiber ferrule extends beyond the main body.

14. The fiber-optic connector according to claim 1, wherein the multi-fiber ferrule is flush with the front end of the main body.

15. The fiber-optic connector according to claim 1, wherein at least one of the first projection or the second projection extends along a length of the ferrule holder.

16. The fiber-optic connector according to claim 1, wherein at least one of the first projection or the second projection has a chamfered front end or a lead-in.

17. The fiber-optic connector according to claim 1, wherein the first and the second projections each have a vertical side surface to align the ferrule holder with a vertical wall to control a horizontal direction of movement of the ferrule holder relative to an adapter.

18. A fiber optic connector for a multi-fiber ferrule, comprising:

a ferrule holder having a central opening extending longitudinally from a first end to a second end;

a multi-fiber ferrule housed within the central opening and having at least two optical fibers supported therein, the multi-fiber ferrule being exposed at an opening at the first end of the ferrule holder, the opening at the first end being in communication with the central opening;

a boot extending in a rearward direction from the ferrule holder and supporting the at least two optical fibers,

wherein the ferrule holder has a main body with a top side and a bottom side joined by two opposing side walls,

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wherein a separation between the top side and the bottom side is more than a separation between the opposing side walls, the opposing side walls being parallel to a fiber alignment axis of the at least two optical fibers at an end face of the multi-fiber ferrule, and

wherein a front end of the ferrule holder has a chamfer;

a first projection extending longitudinally along the top side;

a second projection extending longitudinally along the bottom side,

wherein the first projections is on a first outside surface of the top side of the main body and has at least one dimension that is different than the second projection on an opposite second outside surface on the bottom side of the main body; and

a latching mechanism on at least one of the top surface and the bottom surface,

wherein the latching mechanism is separated longitudinally from the first projection and the second projection.

19. A fiber optic connector for a multi-fiber ferrule, comprising:

a ferrule holder having a central opening extending longitudinally from a first end to a second end;

a multi-fiber ferrule housed within the central opening and having at least two optical fibers supported therein, the multi-fiber ferrule being exposed at an opening at the first end of the ferrule holder, the opening at the first end being in communication with the central opening;

wherein the ferrule holder has a main body with a top side and a bottom side joined by two opposing side walls,

wherein a separation between the top side and the bottom side is more than a separation between the opposing side walls, the opposing side walls being parallel to a fiber alignment axis of the at least two optical fibers at an end face of the multi-fiber ferrule, and

wherein a front end of the ferrule holder has a lead-in;

a first projection on a first outside surface on the top side of the main body and extending longitudinally along the top side;

a second projection on a second outside surface on the bottom side of the main body and extending longitudinally along the bottom side,

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wherein the first projection has a different shape than the second projection,

wherein the first and the second projections each have a vertical side surface to align the ferrule holder with a vertical wall to control a horizontal direction of movement of the ferrule holder relative to an adapter; and

a latching mechanism on at least one of the top surface and the bottom surface,

wherein the latching mechanism is unconnected to the first projection and the second projection.

20. The fiber optic connector of claim 19, further comprising:

a boot extending in a rearward direction from the ferrule holder and supporting the at least two optical fibers.

21. A fiber optic connector for an MT-type ferrule, comprising:

a ferrule holder having a central opening extending longitudinally from a first end to a second end;

an MT-type ferrule housed within the central opening and having at least two optical fibers supported therein, the MT-type ferrule being exposed at an opening at the first end of the ferrule holder, the opening at the first end being in communication with the central opening;

a boot extending rearward of the ferrule holder and configured to support the at least two optical fibers,

wherein the ferrule holder has a main body with a top side and a bottom side joined by two opposing side walls,

wherein a separation between the top side and the bottom side is more than a separation between the opposing side walls, the opposing side walls being parallel to a fiber alignment axis of the at least two optical fibers at an end face of the MT-type ferrule, and

wherein a front end of the ferrule holder has a chamfer;

a first projection on a first outside surface on the top side of the main body and extending longitudinally along the top side;

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a second projection on a second outside surface on the bottom side of the main body and extending longitudinally along the bottom side,

wherein the first projection has a different height or a different width than the second projection; and

a latching mechanism on at least one of the top surface and the bottom surface,

wherein the latching mechanism is unconnected to the first projection and the second projection.

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ALIGNMENT ADAPTER AND ALIGNMENT DESIGN FOR A CONNECTOR THEREFOR

ABSTRACT OF THE DISCLOSURE

An adapter with novel alignment features engages alignment features on a plug, providing general alignment of the ferrule holders and ferrules in the plug. After the plug engages the adapter, the ferrule holders engage a second set of alignment features in the adapter to provide fine alignment for the ferrules.

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DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	**ALIGNMENT ADAPTER AND ALIGNMENT DESIGN FOR A CONNECTOR THEREFOR**

As the below named inventor, I hereby declare that:

This declaration is directed to:

☐ The attached application, or

x United States application or PCT international application number 14/214,931

filed on March 15, 2014.

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I have reviewed and understood the contents of the application, and

I am aware of the duty to disclose to the Office all information known to the person to be material to patentability as defined in 37 CFR § 1.56.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

WARNING: Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

LEGAL NAME OF INVENTOR

Inventor: Jitka Waitz Date (Optional): 7/28/2014

Signature: Jitka Waitz

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form. Use an additional PTO/AIA/01form for each additional inventor.

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LEGAL NAME OF INVENTOR

Inventor: Darrell R. Childers Date (Optional): 7/28/2014

Signature: Darrell R. Childers

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LEGAL NAME OF INVENTOR

Inventor: JOSEPH HOWARD Date (Optional): 7/25/2014

Signature: _____

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form. Use an additional PTO/AIA/01form for each additional inventor.

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LEGAL NAME OF INVENTOR

Inventor: HIEP V. NGUYEN Date (Optional): 7/28/14

Signature: Hiep V. Nguyen

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form. Use an additional PTO/AIA/01form for each additional inventor.

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LEGAL NAME OF INVENTOR

Inventor: Michael E Hughes Date (Optional): 8-26-2014

Signature: Michael E. Hughes

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form. Use an additional PTO/AIA/01form for each additional inventor.

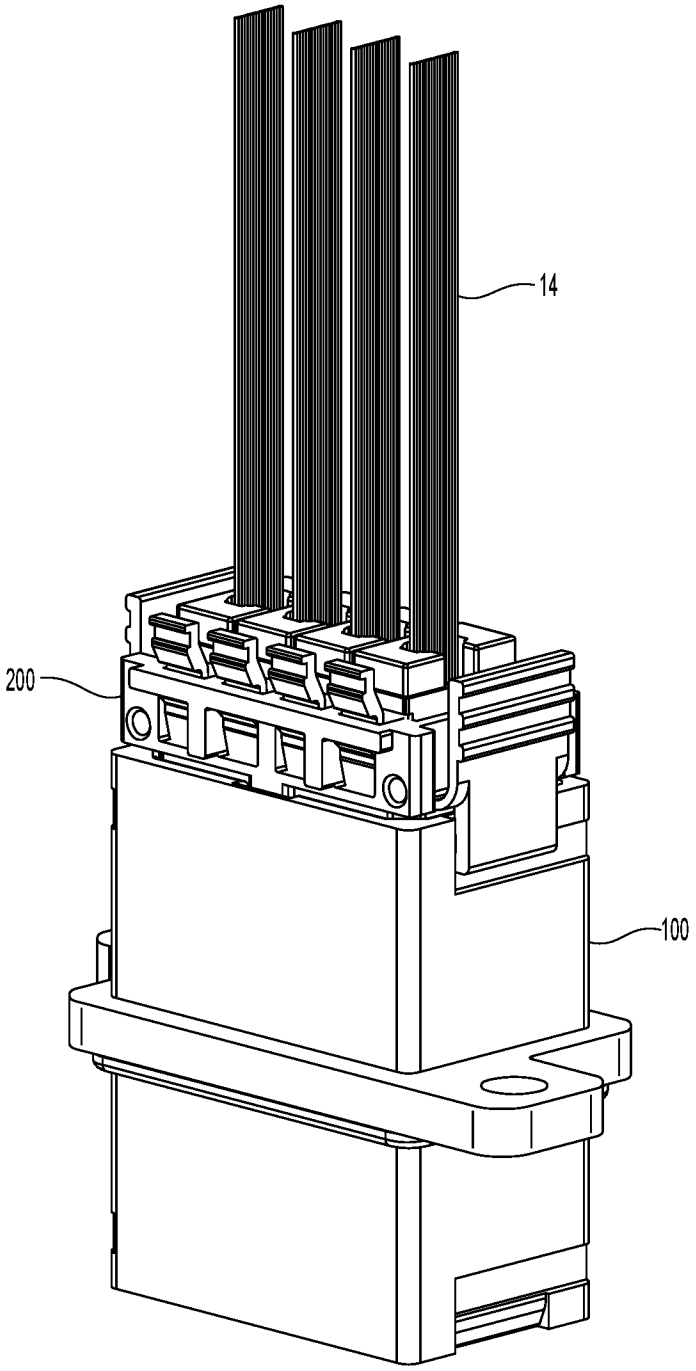


Fig. 1

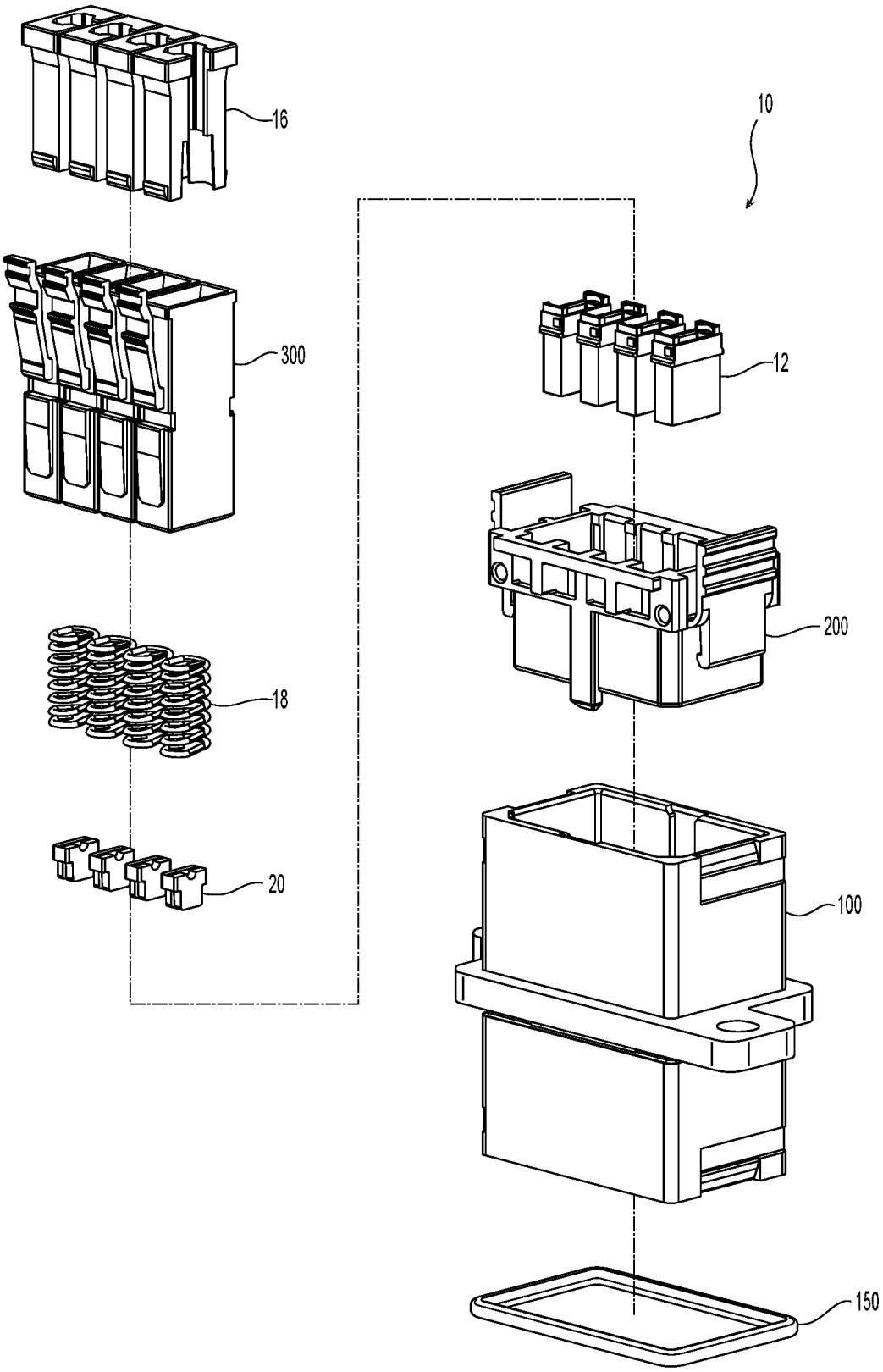


Fig. 2

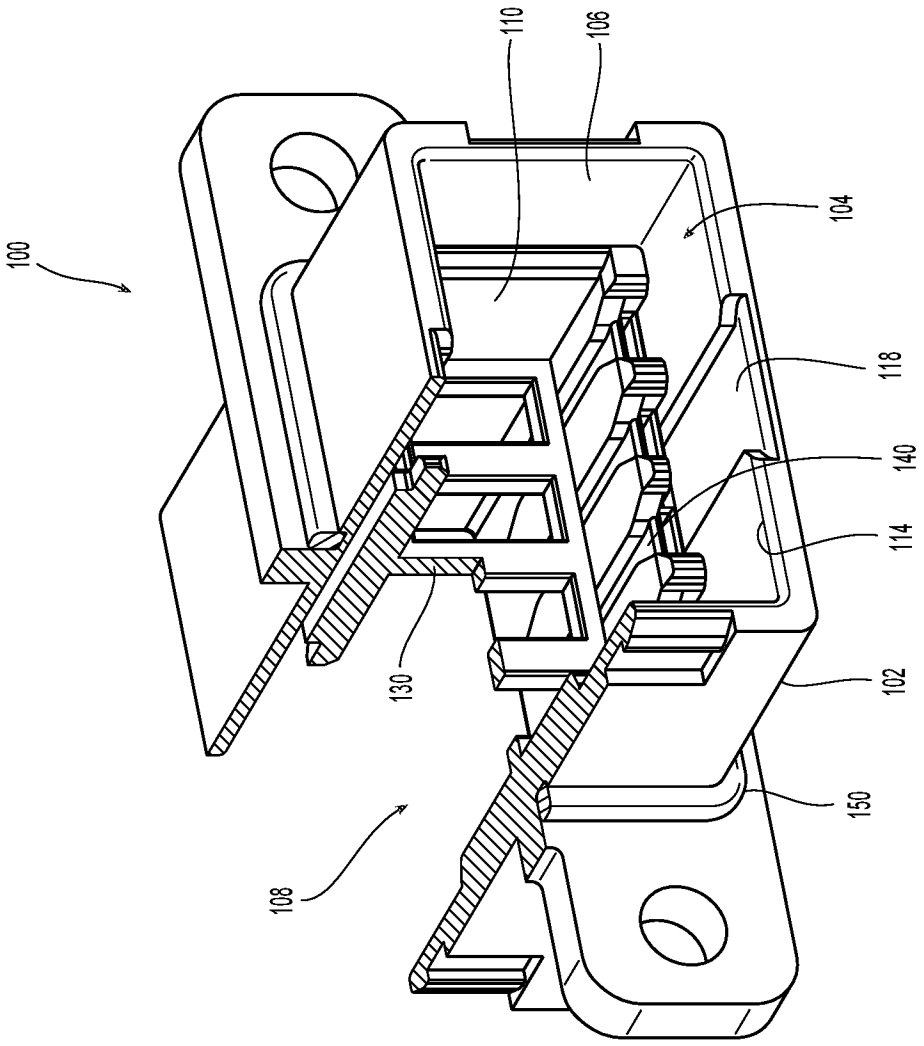


Fig. 3

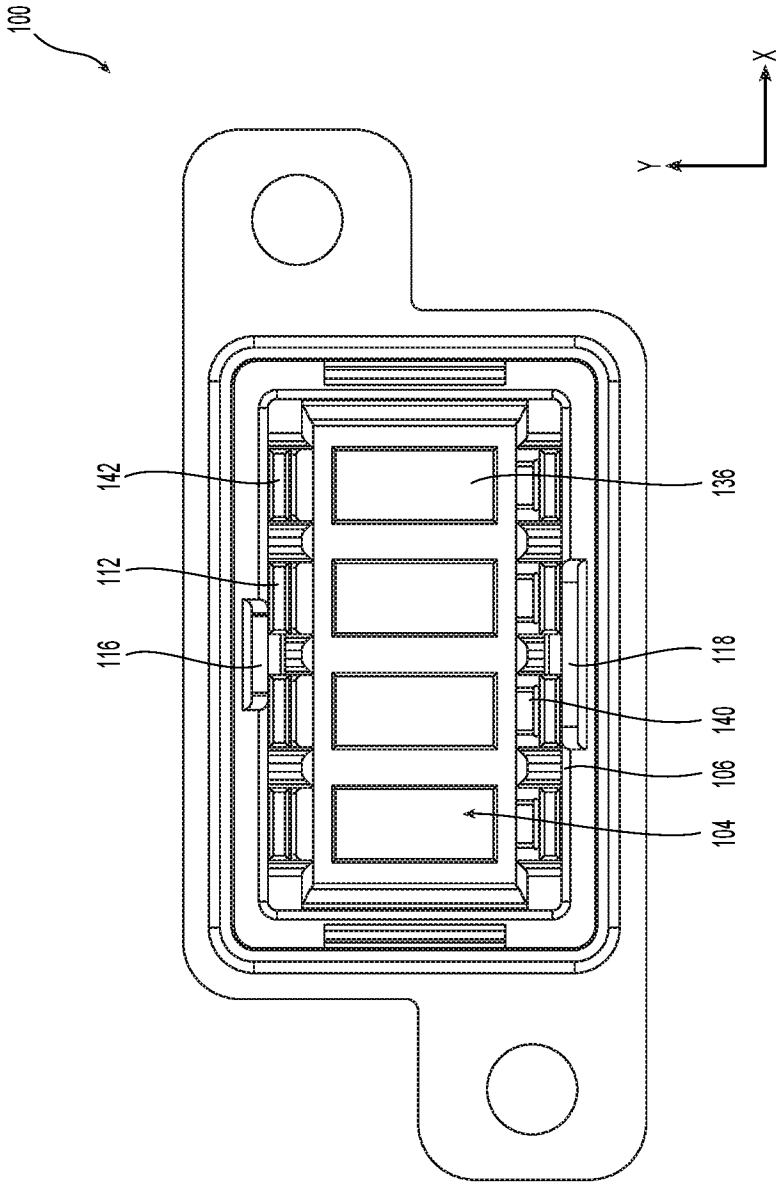


Fig. 4

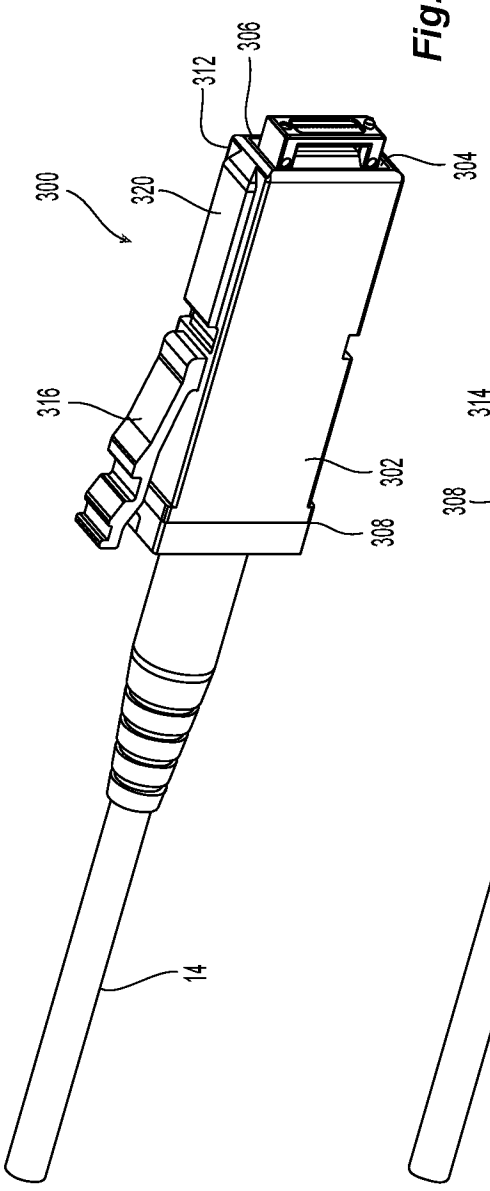


Fig. 5A

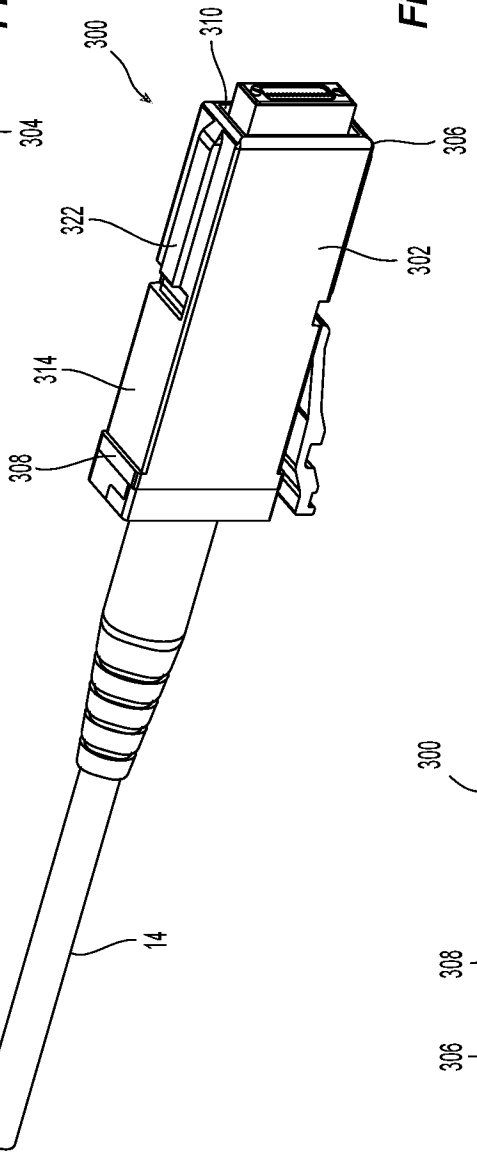


Fig. 5B

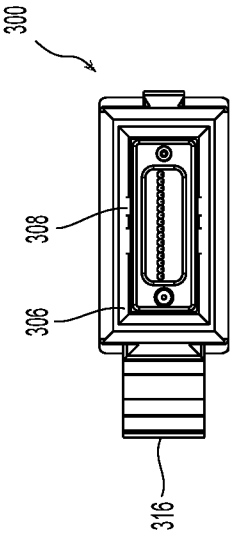


Fig. 5C

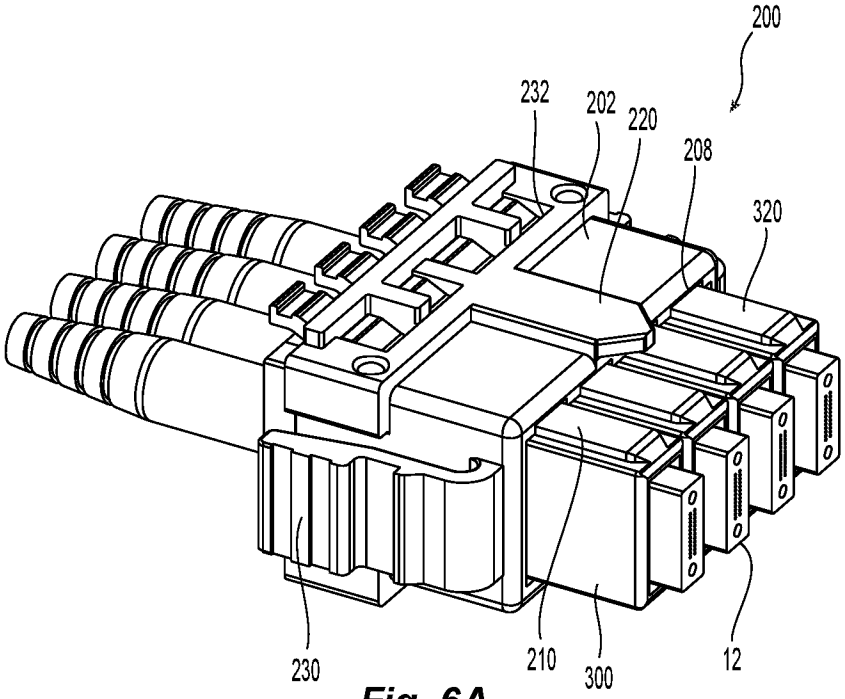

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Fig. 6A

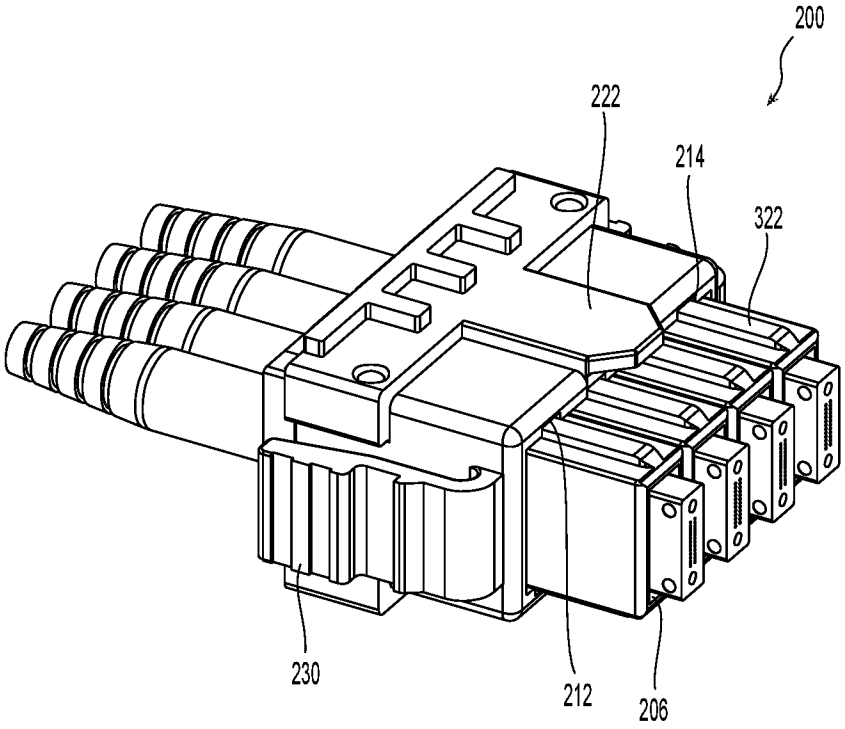

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Fig. 6B

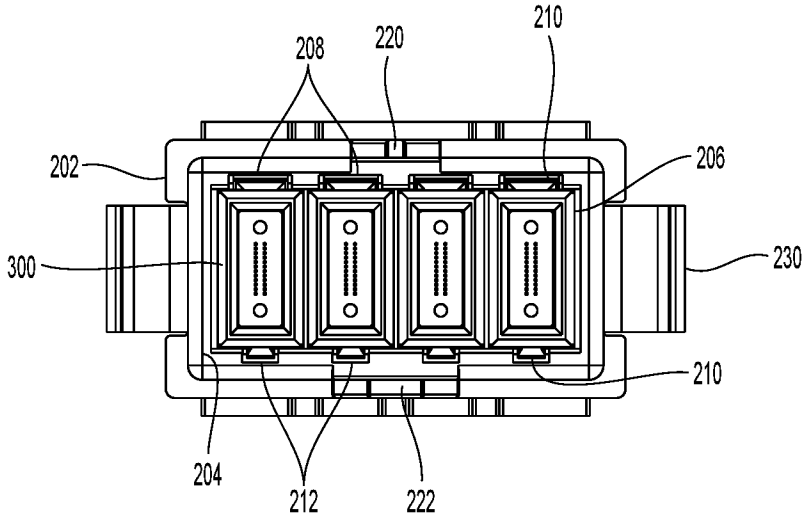


Fig. 6C

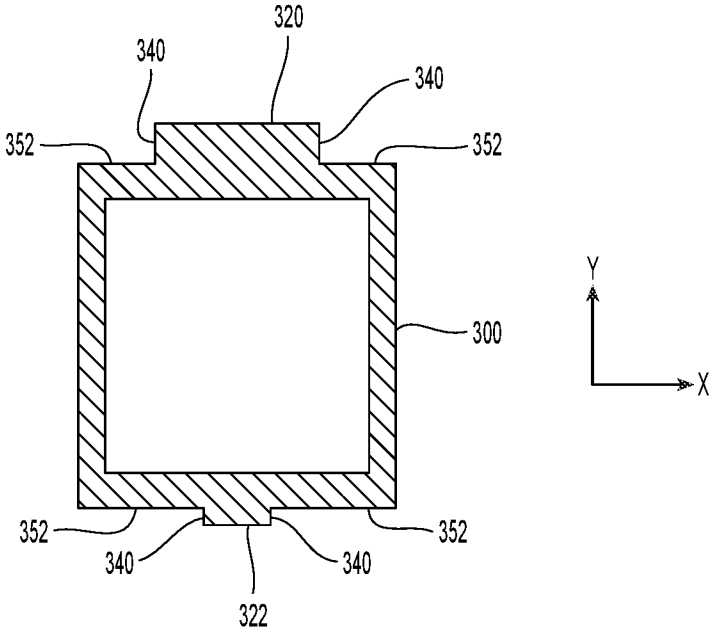

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Fig. 7A

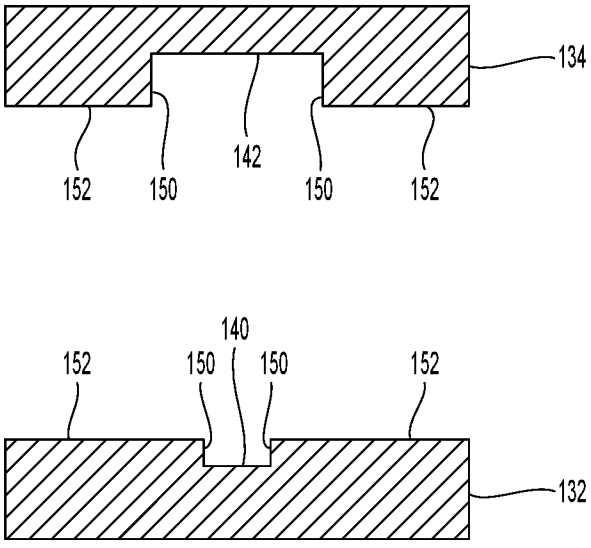

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Fig. 7B

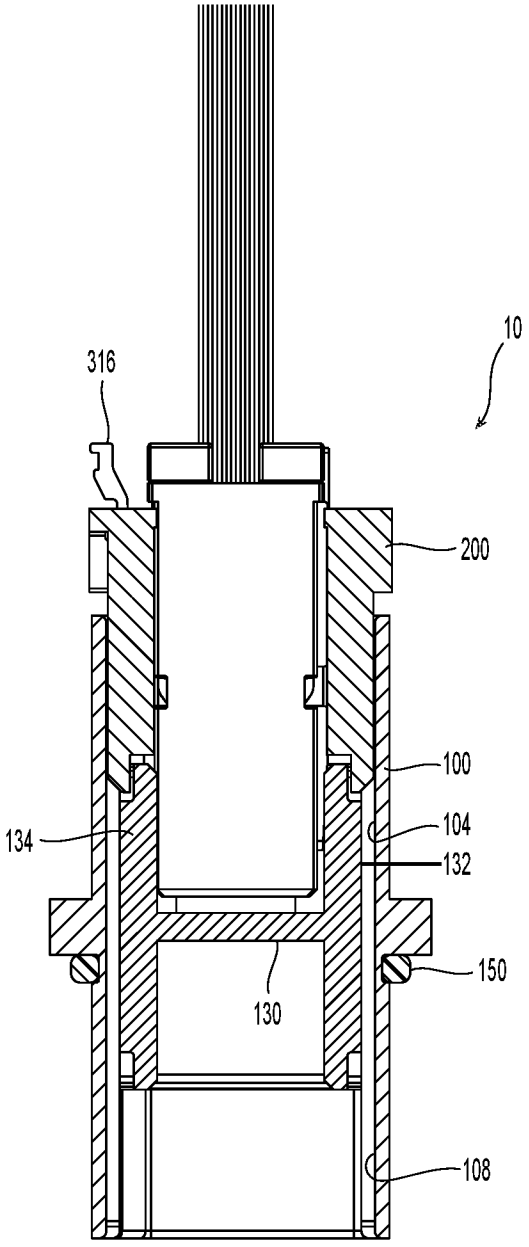


Fig. 8

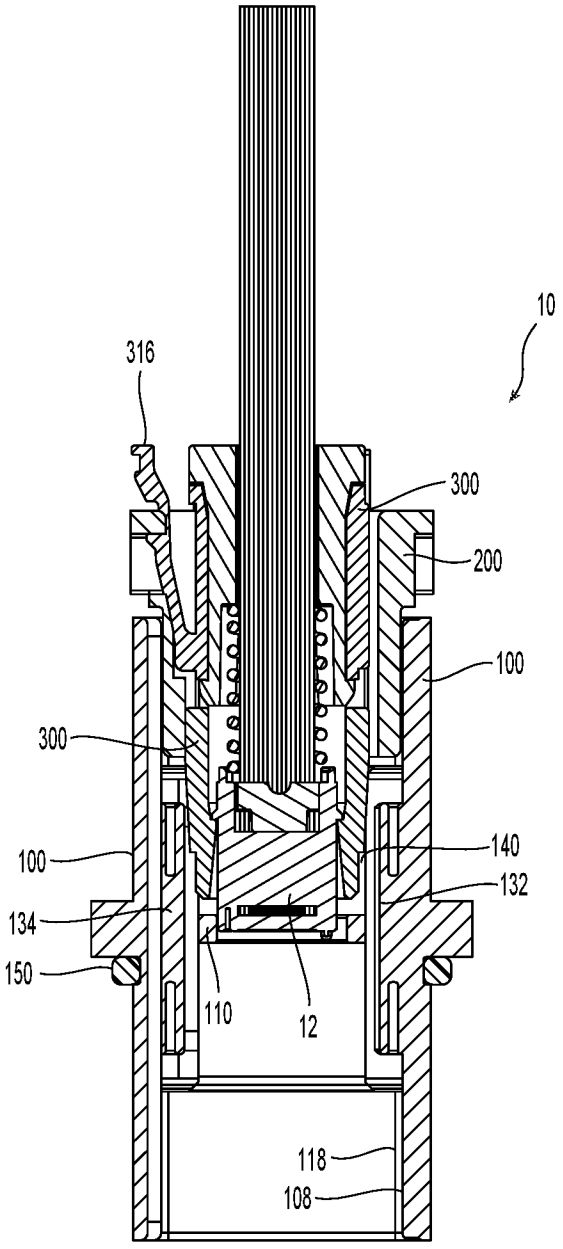


Fig. 9