



APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/153,685	03/03/2020	10578818	AOIT015	1014

27543 7590 02/12/2020
APPLIED OPTOELECTRONICS, INC.
13115 JESS PIRTLE BLVD.
SUGAR LAND, TX 77478

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

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

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

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

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

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

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

Yu CHEN, New Taipei City, TAIWAN;
Prime World International Holdings Ltd., New Taipei City, TAIWAN;
Hsuan-Chen SHIU, New Taipei City, TAIWAN;
Che-Shou YEH, New Taipei City, TAIWAN;

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.

PART B - FEE(S) TRANSMITTAL

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

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

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

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

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

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

27543 7590 11/27/2019
APPLIED OPTOELECTRONICS, INC.
13115 JESS PIRTLE BLVD.
SUGAR LAND, TX 77478

Certificate of Mailing or Transmission

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

April Davis	(Typed or printed name)
/April Davis/	(Signature)
January 21, 2020	(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/153,685	10/05/2018	Yu CHEN	AOIT015	1014

TITLE OF INVENTION: OPTICAL TRANSCEIVER

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1000	\$0.00	\$0.00	\$1000	02/27/2020

EXAMINER	ART UNIT	CLASS-SUBCLASS
TAVLYKAEV, ROBERT FUATOVICH	2883	385-092000

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

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

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

2. For printing on the patent front page, list

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

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

1 Grossman Tucker Perreault
2 & Pfleger, PLLC
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)

Prime World International Holdings Ltd.

New Taipei City, Taiwan

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

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

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

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

☒ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. 50-1705

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

☐ Applicant certifying micro entity status. See 37 CFR 1.29

☐ Applicant asserting small entity status. See 37 CFR 1.27

☐ Applicant changing to regular undiscounted fee status.

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

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

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

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

Authorized Signature /Kevin J. Carroll/

Date January 21, 2020

Typed or printed name Kevin J. Carroll

Registration No. 36,384

Electronic Patent Application Fee Transmittal				
Application Number:		16153685		
Filing Date:		05-Oct-2018		
Title of Invention:		OPTICAL TRANSCEIVER		
First Named Inventor/Applicant Name:		Yu CHEN		
Filer:		Kevin J. Carroll/April Davis		
Attorney Docket Number:		AOIT015		
Filed as Large Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
UTILITY APPL ISSUE FEE	1501	1	1000	1000

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				1000

Electronic Acknowledgement Receipt

EFS ID:	38352093
Application Number:	16153685
International Application Number:	
Confirmation Number:	1014
Title of Invention:	OPTICAL TRANSCEIVER
First Named Inventor/Applicant Name:	Yu CHEN
Customer Number:	27543
Filer:	Kevin J. Carroll/April Davis
Filer Authorized By:	Kevin J. Carroll
Attorney Docket Number:	AOIT015
Receipt Date:	21-JAN-2020
Filing Date:	05-OCT-2018
Time Stamp:	14:57:13
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$ 1000
RAM confirmation Number	E20201KE57440993
Deposit Account	501705
Authorized User	April Davis

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

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

37 CFR 1.17 (Patent application and reexamination processing fees)

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

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	AOIT015_IssueFee_Transmittal.pdf	207820	no	1
			8436d87a214b0acb38f3c28d796eb22465d446c4		

Warnings:

Information:

2	Fee Worksheet (SB06)	fee-info.pdf	29959	no	2
			0ac242cb6512cfdb3d421b84c9dc82154cae22eb		

Warnings:

Information:

Total Files Size (in bytes):	237779
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This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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



UNITED STATES PATENT AND TRADEMARK OFFICE

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

NOTICE OF ALLOWANCE AND FEE(S) DUE

27543 7590 11/27/2019
APPLIED OPTOELECTRONICS, INC.
13115 JESS PIRTLE BLVD.
SUGAR LAND, TX 77478

EXAMINER	
TAVLYKAEV, ROBERT FUATOVICH	
ART UNIT	PAPER NUMBER

2883

DATE MAILED: 11/27/2019

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/153,685	10/05/2018	Yu CHEN	AOIT015	1014

TITLE OF INVENTION: OPTICAL TRANSCEIVER

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1000	\$0.00	\$0.00	\$1000	02/27/2020

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

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

HOW TO REPLY TO THIS NOTICE:

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

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

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

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

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

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

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

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Commissioner for Patents
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APPLIED OPTOELECTRONICS, INC.
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(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/153,685	10/05/2018	Yu CHEN	AOIT015	1014

TITLE OF INVENTION: OPTICAL TRANSCEIVER

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EXAMINER	ART UNIT	CLASS-SUBCLASS
TAVLYKAEV, ROBERT FUATOVICH	2883	385-092000

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1 _____

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

2 _____

3 _____

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(A) NAME OF ASSIGNEE

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

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

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

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

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

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

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

☐ Applicant certifying micro entity status. See 37 CFR 1.29

☐ Applicant asserting small entity status. See 37 CFR 1.27

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

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____



UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/153,685	10/05/2018	Yu CHEN	AOIT015	1014
EXAMINER				
TAVLYKAEV, ROBERT FUATOVICH				
ART UNIT			PAPER NUMBER	
2883				
DATE MAILED: 11/27/2019				

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

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

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

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

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

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

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

Privacy Act Statement

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

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

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

Notice of Allowability	Application No. 16/153,685	Applicant(s) CHEN et al.	
	Examiner ROBERT TAVLYKAEV	Art Unit 2883	AIA (FITF) Status Yes

-- 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 9/5/19.
☐ 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 1-3 and 5-13. 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 _____.
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/ROBERT TAVLYKAEV/
Primary Examiner, Art Unit 2883

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

DETAILED ACTION

Examiner's Amendment

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given by Attorney Kenneth Thompson (Reg. No. 72,001) on 11/22/19 as a follow-up of a telephone interview on 11/21/19 during which the amendment was discussed.

The application has been amended as follows:

In the claims:

1. (Currently Amended) An optical transceiver, configured to be inserted into a cage in a pluggable manner, comprising:

a main body comprising two lateral surfaces and an outer surface between the two lateral surfaces, and the outer surface defining a confined groove;

an elastic component disposed in the confined groove; and

a fastening component movably disposed on the main body, the fastening component comprising a linkage arm, two extending arms and a confined portion, wherein the linkage arm is disposed on the outer surface of the main body, and wherein the linkage arm comprises an opening

~~connected~~ in communication with the confined groove of the main body to ~~receive~~ allow the elastic component to pass through the opening and be disposed ~~into~~ in the confined groove, the two extending arms are connected with the linkage arm, the two extending arms are respectively disposed on the two lateral surfaces, the confined portion is connected with the linkage arm and extends into the confined groove in order to press the elastic component, and the two extending arms are detachably fasten-able with the cage.

11. (Currently Amended) An optical transceiver, comprising:

a main body comprising two lateral surfaces and an outer surface between the two lateral surfaces, and the outer surface defining two confined grooves spaced apart from each other;

two elastic components disposed in the two confined grooves, respectively; and

a fastening component movably disposed on the main body, the fastening component comprising a linkage arm, two extending arms and two confined portions, wherein the linkage arm is disposed on the outer surface of the main body, and wherein the linkage arm comprises an opening ~~connected~~ in communication with the confined groove of the main body to ~~receive~~ allow the elastic component to pass through the opening and be disposed in ~~into~~ the confined groove, the two extending arms are connected with the linkage arm, the two extending arms are respectively disposed on the two lateral surfaces, the confined portions are connected with the linkage arm and respectively extend into the two confined grooves in order to press the two elastic components.

12. (Currently Amended) An optical transceiver, configured to be inserted into a cage in a pluggable manner, comprising:

a main body comprising two lateral surfaces and an outer surface between the two lateral surfaces, and the outer surface defining a confined groove;

an elastic component disposed in the confined groove;

a fastening component movably disposed on the main body, the fastening component comprising a linkage arm, two extending arms and a confined portion, wherein the linkage arm is disposed on the outer surface of the main body, and wherein the linkage arm comprises an opening in communication with the confined groove of the main body to allow the elastic component to pass through the opening and be disposed in the confined groove, the two extending arms are connected with the linkage arm, the two extending arms are respectively disposed on the two lateral surfaces, the confined portion is connected with the linkage arm and extends into the confined groove in order to press the elastic component, and the two extending arms are detachably fastenable with the cage; and

a pivot shaft pivoted on the linkage arm of the fastening component and a bail connected with the pivot shaft, the bail having a horizontal position to allow the bail to be drawn for removal of the optical transceiver from the cage, and an upright position to allow for installation or removal of optical fibers into the optical transceiver.

Reasons for Allowance

2. Claims 1, 11, and 12 are allowed for the following reasons:

The instant application is deemed to be directed to a non-obvious improvement over an optical transceiver of the Tsai – Zhu combination.

Claims 1, 11, and 12 are allowed because the prior art of record, taken alone or in combination, fails to provide a motivation for an optical transceiver having all of the recited features and, in particular, comprising a main body with two lateral surfaces and an outer surface between the two lateral surfaces, an elastic component disposed in a confined groove formed in the outer surface, a fastening component movably disposed on the main body, wherein the fastening component comprises a linkage arm, two extending arms and a confined portion, wherein the linkage arm is disposed on the outer surface of the main body, and wherein the linkage arm comprises an opening in communication with the confined groove of the main body to allow the elastic component to pass through the opening and be disposed in the confined groove. Such an arrangement is disclosed in Fig. 5 and on p.7, lines 13-16 of the instant application. On the contrary, Tsai does not teach that an elastic component 400 is mounted in groove 150 through an opening formed in extending arms by stamping them and creating punched-out portions 240. Zhu uses a circular-shaped elastic component 4 that, even in principle, cannot be passed through openings formed in a linkage arm. Thus, a person of ordinary skill in the art would not be motivated to install the elastic component in Tsai through an opening formed in a linkage arm.

Claims 2, 3, 5 – 10, and 13 are allowed by virtue of dependency on any one of claims 1 and 13.

Conclusion

3. 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.”

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT TAVLYKAEV whose telephone number is (571)270-5634. The examiner can normally be reached on 10:00 am - 6:00 pm, Monday - Friday.

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.

/ROBERT TAVLYKAEV/
Primary Examiner, Art Unit 2883

Issue Classification 	Application/Control No. 16/153,685	Applicant(s)/Patent Under Reexamination CHEN et al.
	Examiner ROBERT TAVLYKAEV	Art Unit 2883

CPC						
Symbol					Type	Version
G02B	/	6	/	4284	F	2013-01-01
H01R	/	13	/	6275	I	2013-01-01

CPC Combination Sets							
Symbol				Type	Set	Ranking	Version
	/		/				

NONE (Assistant Examiner) _____ (Date) _____		Total Claims Allowed: 12	
/ROBERT TAVLYKAEV/ Primary Examiner, Art Unit 2883 (Primary Examiner) _____ (Date) _____		22 November 2019 O.G. Print Claim(s) 1	O.G. Print Figure 5

Issue Classification 	Application/Control No. 16/153,685	Applicant(s)/Patent Under Reexamination CHEN et al.
	Examiner ROBERT TAVLYKAEV	Art Unit 2883

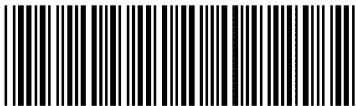
INTERNATIONAL CLASSIFICATION			
CLAIMED			
G02B	/	6	/ 42

NON-CLAIMED			
/		/	

US ORIGINAL CLASSIFICATION	
CLASS	SUBCLASS

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

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	12	
/ROBERT TAVLYKAEV/ Primary Examiner, Art Unit 2883 (Primary Examiner)	22 November 2019 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 5

Issue Classification 	Application/Control No. 16/153,685	Applicant(s)/Patent Under Reexamination CHEN et al.
	Examiner ROBERT TAVLYKAEV	Art Unit 2883

☐ 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
1	1	10	11												
2	2	11	12												
3	3	12	13												
4	5														
5	6														
6	7														
7	8														
8	9														
9	10														

NONE (Assistant Examiner) _____ (Date) _____		Total Claims Allowed: 12	
/ROBERT TAVLYKAEV/ Primary Examiner, Art Unit 2883 (Primary Examiner) _____ (Date) _____		22 November 2019 (Date)	O.G. Print Claim(s) 1
			O.G. Print Figure 5

<i>Search Notes</i> 	Application/Control No. 16/153,685	Applicant(s)/Patent Under Reexamination CHEN et al.
	Examiner ROBERT TAVLYKAEV	Art Unit 2883

CPC - Searched*		
Symbol	Date	Examiner
H01R13/627,6271,6272,6275,62933; G02B6/4284	11/16/2019	RT

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner
385	76,77,88,92	11/16/2019	RT
398	139,200,201,212,214	11/16/2019	RT
439	/133,304,345,346,350,352,353,354,357,358,370	11/16/2019	RT

* 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
search in EAST	11/16/2019	RT
inventor name search	11/16/2019	RT
clm search	11/16/2019	RT

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
385	76,77,88,92	11/16/2019	RT

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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S2	420	((("CHEN") near3 ("Yu"))).INV. and transceiver	US-PGPUB; USPAT; USOCR	OR	OFF	2019/05/28 13:14
S3	29	((("CHEN") near3 ("Yu"))).INV. and (transceiver QSFP) and (arm spring cage)	US-PGPUB; USPAT; USOCR	OR	OFF	2019/05/28 13:15
S4	3	((("SHIU") near3 ("Hsuan-Chen"))).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/05/28 13:16
S5	22	((("YEH") near3 ("Che-Shou"))).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/05/28 13:17
S6	3	((("SHIU") near3 ("Hsuan-Chen"))).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/05/28 13:18
S7	23	((("YEH") near3 ("Che-Shou"))).INV. not S3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/05/28 13:18
S8	1	(14/504500).APP.	USPAT; USOCR	OR	OFF	2019/05/28 13:20
S9	6	("20110081114" "7201520").PN. OR ("9523826").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/05/28 13:20
S10	2	("20050191892" "20120106902").PN.	US-PGPUB; USPAT	OR	OFF	2019/05/28 13:23
S11	39	tavlykaev and transceiver	US-PGPUB; USPAT; USOCR	OR	OFF	2019/05/28 13:27
S12	5	("20140134898" "20170205591" "5915987" "7699641" "9472898").PN. OR ("10209462").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/05/28 13:31
S13	8	(pull adj1 (tab lever)) same spring same (transceiver QSFP (hot adj1 pluggable)) and (385/76,77,88,92.ccls. 439/133,304,345,346,350,352,353,354,357,358,370.ccls. 398/139,200,201,212,214.ccls.)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/05/28 13:35
S14	13	(pull adj1 (tab lever)) same spring and (transceiver QSFP (hot adj1 pluggable)) and (385/76,77,88,92.ccls.	US-PGPUB; USPAT;	OR	OFF	2019/05/28 13:36

		439/133,304,345,346,350,352,353,354,357,358,370.ccls. 398/139,200,201,212,214.ccls.) not S13	USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			
S15	25	(pull adj1 (tab lever)) same spring and (transceiver QSFP (hot adj1 pluggable)) and (H01R13/627,6271,6272,6275,62933.cpc. G02B6/4284.cpc.) not S13 not S14	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/05/28 13:37
S16	15	(pull adj1 (tab lever)) same spring and lock\$3 and unlock\$3 and (H01R13/627,6271,6272,6275,62933.cpc. G02B6/4284.cpc.) not S13 not S14 not S15	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/05/28 13:39
S17	0	(confined adj1 portion and linkage adj1 arm and confined adj1 groove and elastic adj1 component and extending adj1 arms and detachably and cage).clm.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/05/28 13:43
S18	4	("10209462").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/05/28 14:40
S19	2	("20170363828").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/05/28 14:41
S20	17	(US-20190096209-\$ or US-20180299349-\$ or US- 20180254581-\$ or US-20180042021-\$ or US- 20170257868-\$ or US-20160018879-\$ or US- 20150311669-\$ or US-20150057576-\$ or US- 20150018989-\$ or US-20140320509-\$ or US- 20130155475-\$ or US-20110223575-\$ or US- 20100001951-\$ or US-20090188106-\$ or US- 20070241901-\$ or US-20060126882-\$ or US- 20020195681-\$).did.	US-PGPUB	OR	OFF	2019/11/16 21:24
S21	19	((("CHEN") near3 ("Yu"))).INV. and (transceiver QSFP) and (arm spring cage) not S20	US-PGPUB; USPAT; USOCR	OR	OFF	2019/11/16 21:24
S22	2	(US-20180254581-\$ or US-20180252871-\$).did.	US-PGPUB	OR	OFF	2019/11/16 21:26
S23	1	((("SHIU") near3 ("Hsuan-Chen"))).INV. not S22	US-PGPUB; USPAT; USOCR	OR	OFF	2019/11/16 21:26
S24	12	(US-20190018206-\$ or US-20180252871-\$ or US- 20170272169-\$ or US-20170269315-\$ or US- 20170269313-\$ or US-20170269311-\$ or US-	US-PGPUB; FPRS	OR	OFF	2019/11/16 21:26

		20170187462-\$ or US-20170063037-\$ or US-20160041343-\$ or US-20150188635-\$ or US-20150093083-\$).did. or (EP-3430455-\$).did.				
S25	36	((("CHEN") near3 ("Yu"))).INV. and (transceiver QSFP and (arm spring cage)	US-PGPUB; USPAT; USOCR	OR	OFF	2019/11/16 21:26
S26	14	((("YEH") near3 ("Che-Shou"))).INV. not S25 not S24	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/11/16 21:26
S27	10	(US-20160126670-\$ or US-20160111819-\$ or US-20130183846-\$ or US-20120058665-\$ or US-20120052714-\$ or US-20110268390-\$).did. or (WO-2016197437-\$ or WO-2014202489-\$ or US-20170205591-\$ or GB-2489567-\$).did.	US-PGPUB; DERWENT	OR	OFF	2019/11/16 21:30
S28	8	(pull adj1 (tab lever)) same spring same (transceiver QSFP (hot adj1 pluggable)) and (385/76,77,88,92.ccls. 439/133,304,345,346,350,352,353,354,357,358,370.ccls. 398/139,200,201,212,214.ccls.)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/11/16 21:30
S29	3	(pull adj1 (tab lever)) same spring and (transceiver QSFP (hot adj1 pluggable)) and (385/76,77,88,92.ccls. 439/133,304,345,346,350,352,353,354,357,358,370.ccls. 398/139,200,201,212,214.ccls.) not S28 not S27	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/11/16 21:30
S30	5	(US-20180351300-\$ or US-20120294571-\$).did. or (US-7318740-\$ or US-6394842-\$).did. or (WO-2013037123-\$).did.	US-PGPUB; USPAT; FPRS	OR	OFF	2019/11/16 21:32
S31	13	(pull adj1 (tab lever)) same spring and (transceiver QSFP (hot adj1 pluggable)) and (385/76,77,88,92.ccls. 439/133,304,345,346,350,352,353,354,357,358,370.ccls. 398/139,200,201,212,214.ccls.) not S28	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/11/16 21:32
S32	33	(pull adj1 (tab lever)) same spring and (transceiver QSFP (hot adj1 pluggable)) and (H01R13/627,6271,6272,6275,62933.cpc. G02B6/4284.cpc.) not S28 not S31	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/11/16 21:32
S33	7	(pull adj1 (tab lever)) same spring and lock\$3 and unlock\$3 and (H01R13/627,6271,6272,6275,62933.cpc. G02B6/4284.cpc.) not S28 not S31 not S32 not S30	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/11/16 21:32
S34	9	(pull adj1 (tab lever handle)) same spring and lock\$3 and unlock\$3 and (385/76,77,88,92.ccls. 439/133,304,345,346,350,352,353,354,357,358,370.ccls. 398/139,200,201,212,214.ccls.	US-PGPUB; USPAT; USOCR; FPRS;	OR	OFF	2019/11/16 21:36

		H01R13/627,6271,6272,6275,62933.cpc. G02B6/4284.cpc.) not S28 not S31 not S32 not S30 not S33	EPO; JPO; DERWENT; IBM_TDB			
S35	4	(pull adj1 (tab lever handle)) same spring and (transceiver QSFP (hot adj1 pluggable)) and (385/76,77,88,92.ccls. 439/133,304,345,346,350,352,353,354,357,358,370.ccls. 398/139,200,201,212,214.ccls. H01R13/627,6271,6272,6275,62933.cpc. G02B6/4284.cpc.) not S28 not S31 not S32 not S30 not S33 not S34	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/11/16 21:38
S36	8	(pull adj1 (tab lever handle)) same spring and (transceiver QSFP (hot adj1 pluggable)) and ("385".clas. "439".clas. "398".clas. H01R13.cpc. G02B6.cpc.) not S28 not S31 not S32 not S30 not S33 not S34 not S35	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/11/16 21:41
S37	0	(confined adj1 portion and linkage adj1 arm and confined adj1 groove and elastic adj1 component and extending adj1 arms and detachably and cage).clm.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/11/16 21:45
S38	27	"153685".ap.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/11/16 21:46

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No. : 16/153,685 Confirmation No. : 1014

Inventors : Yu Chen
Filed : October 5, 2018
TC/A.U. : 2883
Examiner : Tavlykaev
Docket No. : AOIT015
Customer No. : 27,543

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

AMENDMENT AND REPLY UNDER 37 CFR § 1.111

Sir:

In response to the Office Action dated June 5, 2019, please amend the application as follows and consider the included remarks. Applicant is filing this amendment within the three-month statutory period for reply on or before September 5, 2019. Thus, Applicant believes that no extension of time is required. In the event that an additional extension is required, Applicant herewith petitions the Director of the United States Patent and Trademark Office for the necessary extension and authorizes the Director to charge Deposit Account 50-1705.

IN THE CLAIMS

1. (Currently Amended) An optical transceiver, configured to be inserted into a cage in a pluggable manner, comprising:
 - a main body comprising two lateral surfaces and an outer surface between the two lateral surfaces, and the outer surface defining a confined groove;
 - an elastic component disposed in the confined groove; and
 - a fastening component movably disposed on the main body, the fastening component comprising a linkage arm, two extending arms and a confined portion, wherein the linkage arm is disposed on the outer surface of the main body, and wherein the linkage arm comprises an opening connected with the confined groove of the main body to receive the elastic component into the confined groove, the two extending arms are connected with the linkage arm, the two extending arms are respectively disposed on the two lateral surfaces, the confined portion is connected with the linkage arm and extends into the confined groove in order to press the elastic component, and the two extending arms are detachably fasten-able with the cage.
2. (Original) The optical transceiver according to claim 1, wherein the outer surface is either a top surface or a bottom surface of the main body.
3. (Original) The optical transceiver according to claim 1, wherein the main body comprises a first confined surface forming the confined groove, the confined portion of the fastening component comprises a second confined surface facing toward the first confined surface, and the elastic component is disposed between the first confined surface and the second confined surface.
4. (Cancelled)
5. (Currently Amended) The optical transceiver according to claim [[4]] 1, wherein a size of the opening is smaller than a length of the elastic component in an uncompressed condition.
6. (Currently Amended) The optical transceiver according to claim [[4]] 1, wherein the opening is located between two ends of the linkage arm where the two extending arms are connected.
7. (Currently Amended) The optical transceiver according to claim [[4]] 1, wherein the confined portion and the opening of the fastening component are formed by stamping.

8. (Currently Amended) The optical transceiver according to claim 1, wherein the main body comprises a head portion and an insertion portion connected with each other, the insertion portion is configured to be inserted into the cage in a pluggable manner, the head portion comprises the outer surface, the two lateral surfaces and an optical fiber terminal.
9. (Original) The optical transceiver according to claim 1, further comprising a pivot shaft pivoted on the linkage arm of the fastening component and a bail connected with the pivot shaft.
10. (Original) The optical transceiver according to claim 1, wherein the optical transceiver is a QSFP-DD (Quad Small Form-factor Pluggable Double Density) optical transceiver.
11. (Currently Amended) An optical transceiver, comprising:
 - a main body comprising two lateral surfaces and an outer surface between the two lateral surfaces, and the outer surface defining two confined grooves spaced apart from each other;
 - two elastic components disposed in the two confined grooves, respectively; and
 - a fastening component movably disposed on the main body, the fastening component comprising a linkage arm, two extending arms and two confined portions, wherein the linkage arm is disposed on the outer surface of the main body, and wherein the linkage arm comprises an opening connected with the confined groove of the main body to receive the elastic component into the confined groove the two extending arms are connected with the linkage arm, the two extending arms are respectively disposed on the two lateral surfaces, the confined portions are connected with the linkage arm and respectively extend into the two confined grooves in order to press the two elastic components.
12. (New) An optical transceiver, configured to be inserted into a cage in a pluggable manner, comprising:
 - a main body comprising two lateral surfaces and an outer surface between the two lateral surfaces, and the outer surface defining a confined groove;
 - an elastic component disposed in the confined groove;

a fastening component movably disposed on the main body, the fastening component comprising a linkage arm, two extending arms and a confined portion, wherein the linkage arm is disposed on the outer surface of the main body, the two extending arms are connected with the linkage arm, the two extending arms are respectively disposed on the two lateral surfaces, the confined portion is connected with the linkage arm and extends into the confined groove in order to press the elastic component, and the two extending arms are detachably fasten-able with the cage; and

a pivot shaft pivoted on the linkage arm of the fastening component and a bail connected with the pivot shaft, the bail having a horizontal position to allow the bail to be drawn for removal of the optical transceiver from the cage, and an upright position to allow for installation or removal of optical fibers into the optical transceiver.

13. (New) The optical transceiver of claim 12, wherein the bail is configured to remain in the upright position without application of external force.

REMARKS

Please reconsider the application in view of the above amendments and the following remarks.

Status of the Claims

Claims 1-11 stand rejected. Independent claims 1 and 11 are amended herein. In particular, independent claims 1 and 11 have been amended to include features recited in claim 4 along with features discussed on, for instance, page 8 lines 11-19 of Applicant's originally-filed disclosure. Accordingly, claim 4 is cancelled herein without prejudice or disclaimer. Claims 5-7 were amended for consistency. Claim 8 was amended to remedy a minor informality.

New claims 12 and 13 are presented herein. Support for the new claims can be found at, for example, page 7 lines 17-26 of Applicant's originally-filed disclosure, and in the claims as originally filed.

Accordingly, claims 1-3, and 5-13 remain pending with claims 1, 11 and 12 being independent claims.

Claim Objections

Claims 1-10 were objected to over minor informalities. In particular, page 2 of the Office Action noted that claims 1 and 8 each recite "in (*sic*) pluggable manner." Applicant herein amends the claims to recite "in a pluggable manner" and respectfully requests reconsideration and withdrawal of the objections.

Rejections under 35 U.S.C. § 103

Claims 1-11 were rejected under 35 U.S.C. 103 as being unpatentable over U.S. Pat. Pub. No. 2015/0093083 (Tsai) in view of U.S. Pat. Pub. No. 2017/0363828 (Zhu).

Without conceding to the correctness of this rejection, independent claims 1 and 11 have been amended to include features of dependent claim 4, and further to clarify that "the linkage arm comprises an opening connected with the confined groove of the main body to receive the elastic component into the confined groove."

As discussed on page 8 of Applicant's disclosure:

The opening 250a of the fastening component 200a exposes the elastic component 400a to outside. In detail, a method of positioning the elastic component 400a in the confined groove 150a is to compress the elastic component 400a by hand, and then put the elastic component 400a into the confined groove 150a through the

opening 250a. Therefore, the elastic component 400a could be mounted or unmounted with more efficiency.

One example of this feature is illustrated in FIG .5:

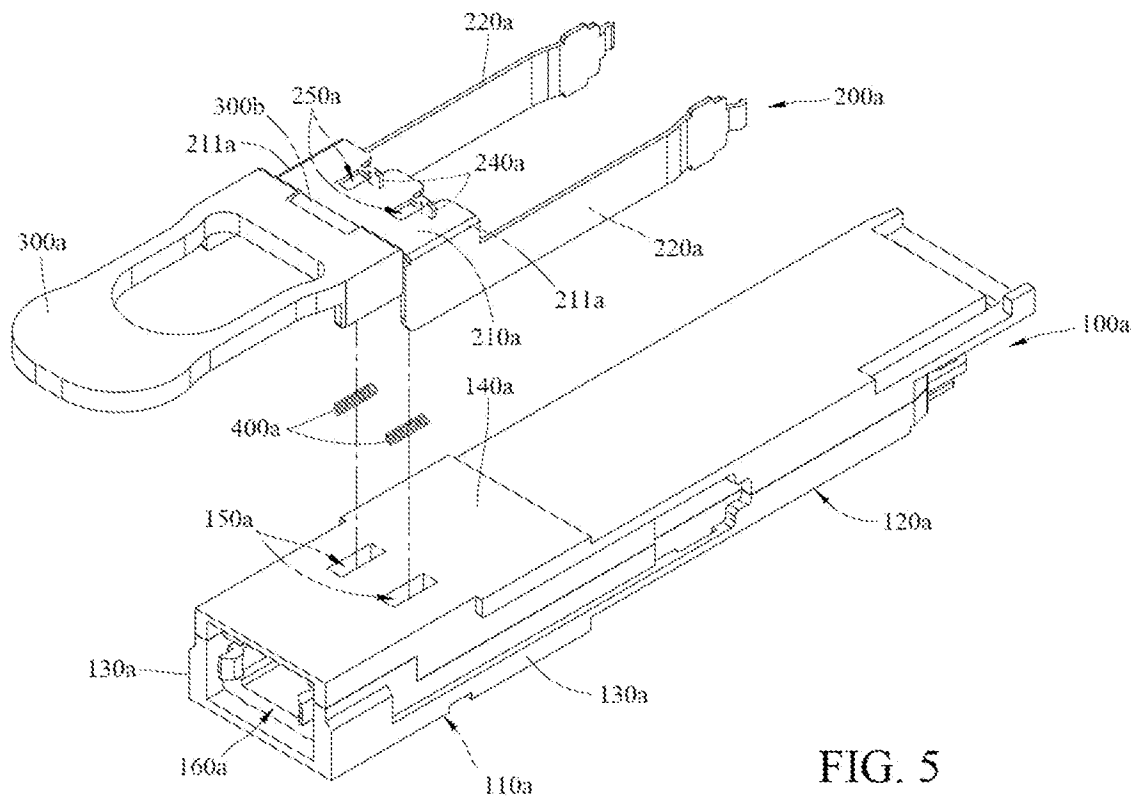


FIG. 5

Thus, the claimed linkage arm includes an opening to allow for insertion of the elastic component 400a, e.g., a spring, into the confined groove 150a via an opening for convenient mounting/unmounting.

In contrast, Tsai includes springs 400 which are disposed in limiting space 150, which is shown in FIG. 3 reproduced below:

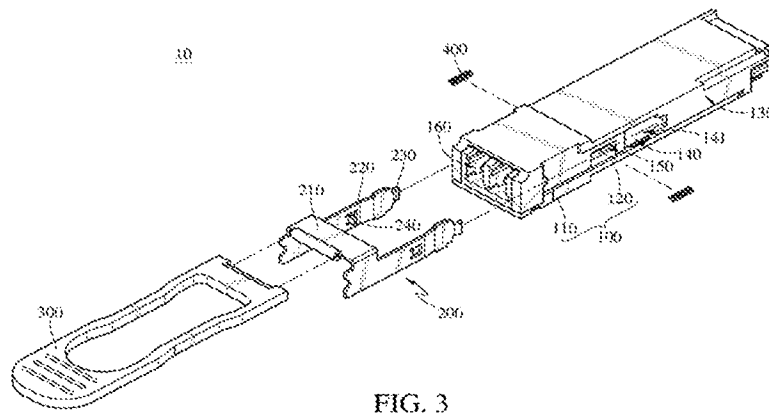


FIG. 3

However, in Tsai, the sliding component 200 does not include an opening to allow for mounting/unmounting of spring 400 into the limiting space 150. Tsai teaches, at best, an opening to allow limited part 240 to engage spring 400. This opening of Tsai does not allow for mounting/unmounting of the spring 400. This is because limited part 240 is designed to engage the spring 400 and, by virtue of this design, prevents unmounting/mounting of the spring through the associated opening.

Zhu is similarly deficient in that the locking component 3 does not include openings for mounting/unmounting a spring 4. As shown in FIG. 5 of Zhu reproduced below, the only openings are adjacent spring-catch elements 33. However, the spring-catch elements 33 prevent mounting/unmounting of the spring 4 by virtue of their design, which is to engage the spring 4.

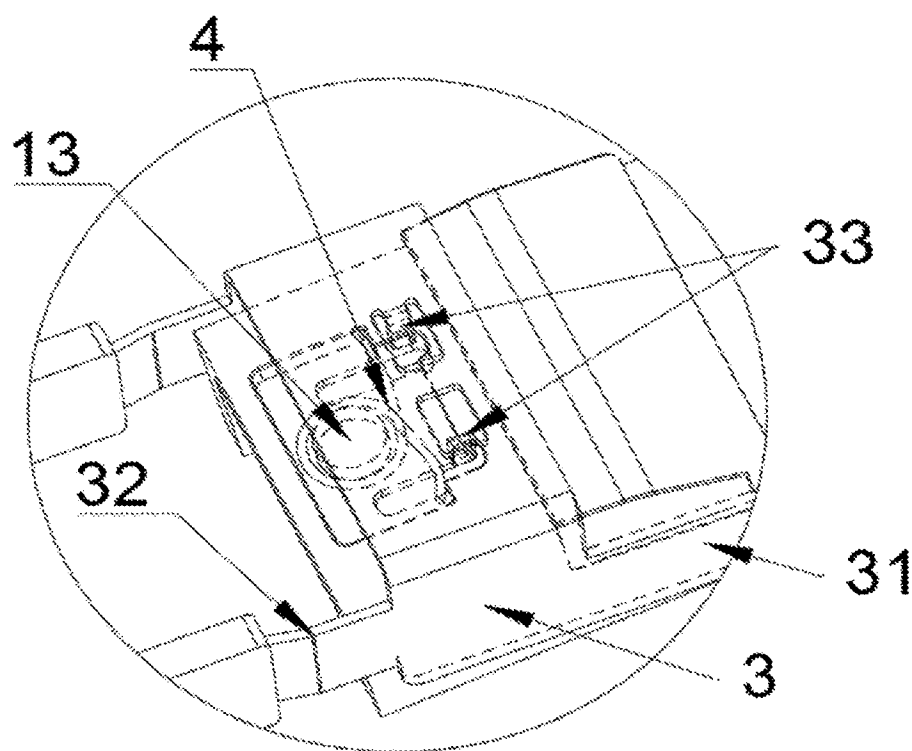


FIG. 5

For at least these reasons, Tsai and Zhu fail to disclose or make obvious each and every element of claims 1 and 11, and the claims dependent therefrom. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejections under 35 U.S.C. § 103.

New Claims 12 and 13

New claim 12 is presented herein and is generally directed to an optical transceiver configured to be inserted into a cage in a pluggable manner. The optical transceiver including a main body comprising two lateral surfaces and an outer surface between the two lateral surfaces, and the outer surface defining a confined groove, an elastic component disposed in the confined groove, a fastening component movably disposed on the main body, the fastening component comprising a linkage arm, two extending arms and a confined portion, wherein the linkage arm is disposed on the outer surface of the main body, the two extending arms are connected with the linkage arm, the two extending arms are respectively disposed on the two lateral surfaces, the

confined portion is connected with the linkage arm and extends into the confined groove in order to press the elastic component, and the two extending arms are detachably fasten-able with the cage, and a pivot shaft pivoted on the linkage arm of the fastening component and a bail connected with the pivot shaft, the bail having a horizontal position to allow the bail to be drawn for removal of the optical transceiver from the cage, and an upright position to allow for installation or removal of optical fibers into the optical transceiver, and a pivot shaft pivoted on the linkage arm of the fastening component and a bail connected with the pivot shaft, the bail having a horizontal position to allow the bail to be drawn for removal of the optical transceiver from the cage, and an upright position to allow for installation or removal of optical fibers into the optical transceiver.

Applicant notes that the proposed combination of Tsai and Zhu fails to teach at least a housing to detachably fasten to a cage, wherein the housing includes a bail rotatable between a horizontal and vertical position based on a pivot shaft. The proposed combination of Tsai and Zhu results in, at best, a *fixed* or non-rotatable handle. This is because the locking component 3 and spring of Zhu, reproduced above in FIG. 5, operate based on the locking component 3 having a relatively fixed handle that allows for drawing of the housing, but not rotation. Thus, the handle arrangement of Tsai would, at best, require substantial redesign to permit rotation and also include the top-spring of Zhu, and at worst would render Tsai inoperable for its intended purposes as the locking component of Tsai would likely cause Zhu to have a non-rotatable handle.

Conclusion

The claims have been shown to be allowable over the prior art. Applicant believes that this paper is responsive to each and every ground of rejection cited by the Examiner in the Action dated June 5, 2019, and respectfully requests favorable action in this application. The examiner is invited to telephone the undersigned, Applicant's attorney of record, to facilitate advancement of the present application. Please apply any charges not covered, or any credits, to Deposit Account 50-1705 (Reference Number AOIT015).

Respectfully submitted,

GROSSMAN, TUCKER, PERREAULT &
PFLEGER PLLC

Date: September 5, 2019

By: /Kenneth M. Thompson/
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Electronic Acknowledgement Receipt

EFS ID:	37071965
Application Number:	16153685
International Application Number:	
Confirmation Number:	1014
Title of Invention:	OPTICAL TRANSCEIVER
First Named Inventor/Applicant Name:	Yu CHEN
Customer Number:	27543
Filer:	Kenneth M. Thompson/April Davis
Filer Authorized By:	Kenneth M. Thompson
Attorney Docket Number:	AOIT015
Receipt Date:	05-SEP-2019
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Time Stamp:	11:23:17
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		AOIT015_Amendment_asfiled.pdf	643274 59db0399e19f0049ce85b7d245f81b0e3a861797	yes	10

Multipart Description/PDF files in .zip description			
Document Description	Start	End	
Amendment/Req. Reconsideration-After Non-Final Reject	1	1	
Claims	2	4	
Applicant Arguments/Remarks Made in an Amendment	5	10	

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

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

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



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/153,685	10/05/2018	Yu CHEN	AOIT015	1014
27543 7590 06/05/2019 APPLIED OPTOELECTRONICS, INC. 13115 JESS PIRTLE BLVD. SUGAR LAND, TX 77478			EXAMINER TAVLYKAEV, ROBERT FUATOVICH	
			ART UNIT	PAPER NUMBER
			2883	
			NOTIFICATION DATE	DELIVERY MODE
			06/05/2019	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):

docketing@gtp.com
kcarroll@gtp.com
kinsella@ao-inc.com

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.
2. In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

DETAILED ACTION

Claim Objections

3. **Claims 1 – 10 are objected to because of the following informalities:**

Claims 1 and 8 each recite the limitation “in pluggable manner” which appears to have a typographical error. For the purposes of this Action, each instance of the limitation is interpreted as -- in a pluggable manner. Appropriate corrections are required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102 of this title, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103 are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims the examiner presumes that the subject matter of the various claims was commonly owned as of the effective filing date of the claimed invention(s) absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and effective filing dates of each claim that was not commonly owned as of the effective filing date of the later invention in order for the examiner to consider the applicability of 35 U.S.C. 102(b)(2)(C) for any potential 35 U.S.C. 102(a)(2) prior art against the later invention.

6. Claims 1 – 11 are rejected under 35 U.S.C. 103 as being unpatentable over Tsai et al (US 2015/0093083 A1) in view of Zhu et al (US 2017/0363828 A1).

Regarding claims 1 and 2, Tsai discloses (Figs. 1 – 6; para. 0018 – 0031) an optical transceiver 10 (para. 0018) configured to be inserted into a cage 20 in a pluggable manner (as shown in Figs. 1 (plugged/engaged state) and 2 (unplugged/disengaged state), the optical transceiver 10 comprising:

a main body 100 comprising two lateral surfaces 130 and an outer surface (a top surface and/or a bottom surface of the main body 100) between the two lateral (side) surfaces 130, and each lateral surface 130 defining a confined groove 150 (para. 0019);

an elastic component 400 (spring) disposed in each confined groove 150 (Fig. 4B; para. 0026); and

a fastening component 200 (Fig. 3) movably (slideably) disposed on the main body 100 (para. 0019), the fastening component 200 comprising a linkage arm 210, two extending arms 220 and a confined portion 240 (Fig. 3; para. 0023), wherein the linkage arm 210 is disposed on the outer surface (the top surface of 100 in the spatial orientation of Figs. 1 – 3) of the main body 100, the two extending arms 220 are connected with the linkage arm 210, the two extending arms 220 are respectively disposed on the two lateral surfaces 130, the confined portion 240 is connected with the linkage arm 210 (via 220) and extends into the confined groove 150 in order to press the elastic component 400 (as shown in a compressed state of 400 in Fig. 5B), and the two extending arms 220 are detachably fasten-able with the cage 20 (by using latching hooks 230; para. 0028 and 0029).

The embodiment in Figs. 1 and 6 of Tsai comprises a pull tab/lever 300 that is spring-biased/loaded by the two springs 400 disposed in the confined grooves 150 formed in the two *lateral (side)* surfaces 130. While the teachings of Tsai generally render obvious that such grooves springs can be disposed on *any other suitable/workable surface* of the main body 100, including the *outer (top) surface* thereof, Tsai does not *explicitly illustrate* such arrangement. However, Zhu discloses (Figs. 1 – 12; para. 0029 – 0032) an optical transceiver (Fig. 10) configured to be inserted into a cage 5 in a pluggable manner (as shown in Fig. 11) and comprising:

a main body 1,2 comprising two lateral (side) surfaces and an outer (top) surface between the two lateral (side) surfaces,

wherein a pull tab/lever 32 is spring-biased/loaded by a spring 4 disposed in a confined groove 12 formed in the *outer (top) surface* of the main body (Figs. 4 and 5). The spring is pressed upon by two confined portions 33 formed on a linkage arm that connects two extending arms 31 (Figs. 2 and 3).

It would have been obvious to a person of ordinary skill in the art before the effective filing date of the claimed invention that the confined grooves 150 of Tsai can alternatively be formed in the outer (top) surface of the main body 100, as a matter of a suitable/workable design choice that is generally rendered obvious by the teachings of Tsai and *explicitly illustrated* by Zhu.

Regarding claims 3 – 9, the optical transceiver of the Tsai – Zhu combination has essential structural features (including a bail 300 and a pivot shaft) and the principle of operation that are substantially identical to those of an optical transceiver shown in Figs. 4 – 8 of the instant application (the second embodiment/species elected by Applicant by original presentation), as evident from a direct comparison of Figs. 1 – 6 of Tsai (modified according to Figs. 1 – 4 of Zhu) and Figs. 4 – 8 of the instant application. A proper mapping of the recited elements and functionalities on the elements and functionalities of the optical transceiver of the Tsai – Zhu combination is self-evident and detailed for claim 1 and/or below.

Further for claim 3, Tsai teaches that the main body 100 comprises a first confined surface 151 forming the confined groove 150 (Figs. 4B and 5B; para. 0020), the confined portion 240 of the fastening component 200 comprises a second confined surface (the left vertical surface of 240 in Figs. 4B and 5B) facing toward the first confined surface 151, and the elastic component 400 is disposed between the first confined surface 151 and the second confined surface (Figs. 4B and 5B).

Further for claims 4 and 6, the Tsai – Zhu combination considers that the linkage arm (210 in Fig. 3 of Tsai which corresponds to the arm connecting two extending arms 31 in Fig. 2 of Zhu) comprises an opening (two openings shown in Figs. 2 and 3 of Zhu) connected with the confined groove (into which the confined portions 33 extend) formed on the outer (top) surface of the main body 100, wherein the opening is located between two ends of the linkage arm where the two extending arms are connected (Figs. 2 and 3 of Zhu).

Further for claim 5, the Tsai – Zhu combination considers that a size of the opening is smaller than a length of the elastic component 400 in an uncompressed condition so that the elastic component 400 cannot fall out of the confined groove.

Further for claim 7, the Tsai – Zhu combination considers that the confined portion (240 in Fig. 3 of Tsai which directly corresponds to 33 in Figs. 2 and 3 of Zhu) can be formed by punching/stamping through the fastening component 200 so that an opening is formed in the fastening component. The use of stamping would be obvious to a person of ordinary skill in the art as a suitable/workable process.

Further for claim 8, Tsai teaches (Fig. 2) that the main body 100 comprises a head portion 110 and an insertion portion 120 connected with each other, the insertion portion 120 is configured to be inserted into the cage 20 in a pluggable manner, the head portion 110 comprises the outer (top) surface, the two lateral surfaces 130, and an optical fiber terminal 160 (Fig. 4A; para. 0022).

Further for claim 9, Tsai teaches (Figs. 1 – 3 and 6) a pivot shaft (seen in Figs. 1 – 3) pivoted on the linkage arm 210 of the fastening component 200 (as shown in Fig. 6; para. 0024 and 0029) and a bail 300 connected with the pivot shaft.

Regarding claim 10, both Tsai (para. 0003) and Zhu (Abstract) consider that the optical transceiver is a QSFP-DD (Quad Small Form-factor Pluggable Double Density) optical transceiver.

Regarding claim 11, the teachings of Tsai and Zhu combine (see the arguments and motivation for combining as applied to claim 1 above) to teach expressly or render obvious all of the recited limitations (including two confined grooves and two confined portions), as detailed above for claim 1.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Cited in the attached PTO-892

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT TAVLYKAEV whose telephone number is (571)270-5634. The examiner can normally be reached on 10:00 am - 6:00 pm, Monday - Friday.

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.

9. 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

Art Unit: 2883

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.

/ROBERT TAVLYKAEV/
Primary Examiner, Art Unit 2883

<i>Notice of References Cited</i>	Application/Control No. 16/153,685		Applicant(s)/Patent Under Reexamination CHEN et al.	
	Examiner ROBERT TAVLYKAEV		Art Unit 2883	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-20150093083-A1	04-2015	Tsai; Chao-Hung	G02B6/423	385/92
*	B	US-20110081114-A1	04-2011	Togami; Chris K.	G02B6/4246	385/76
*	C	US-9720189-B1	08-2017	Wang; Wei-Chuan	G02B6/387	1/1
*	D	US-20140134898-A1	05-2014	Wang; Yingtao	H01R13/6275	439/843
*	E	US-7699641-B2	04-2010	Bright; Edward John	H01R13/6275	439/352
*	F	US-20170363828-A1	12-2017	Zhu; Peiwen	G02B6/42	1/1
	G					
	H					
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FOREIGN PATENT DOCUMENTS

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

NON-PATENT DOCUMENTS

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

<i>Search Notes</i> 	Application/Control No. 16/153,685	Applicant(s)/Patent Under Reexamination CHEN et al.
	Examiner ROBERT TAVLYKAEV	Art Unit 2883

CPC - Searched*		
Symbol	Date	Examiner
H01R13/627,6271,6272,6275,62933; G02B6/4284	05/28/2019	RT

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner
385	76,77,88,92	05/28/2019	RT
398	139,200,201,212,214	05/28/2019	RT
439	/133,304,345,346,350,352,353,354,357,358,370	05/28/2019	RT

* 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
search in EAST	05/28/2019	RT
inventor name search	05/28/2019	RT
clm search	05/28/2019	RT

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
385	76,77,88,92	05/28/2019	RT

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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	8	(pull adj1 (tab lever)) same spring same (transceiver QSFP (hot adj1 pluggable)) and (385/76,77,88,92.ccls. 439/133,304,345,346,350,352,353,354,357,358,370.ccls. 398/139,200,201,212,214.ccls.)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/05/28 13:35
L2	13	(pull adj1 (tab lever)) same spring and (transceiver QSFP (hot adj1 pluggable)) and (385/76,77,88,92.ccls. 439/133,304,345,346,350,352,353,354,357,358,370.ccls. 398/139,200,201,212,214.ccls.) not 1	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/05/28 13:36
L3	25	(pull adj1 (tab lever)) same spring and (transceiver QSFP (hot adj1 pluggable)) and (H01R13/627,6271,6272,6275,62933.cpc. G02B6/4284.cpc.) not 1 not 2	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/05/28 13:37
L4	15	(pull adj1 (tab lever)) same spring and lock\$3 and unlock\$3 and (H01R13/627,6271,6272,6275,62933.cpc. G02B6/4284.cpc.) not 1 not 2 not 3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/05/28 13:39
L5	0	(confined adj1 portion and linkage adj1 arm and confined adj1 groove and elastic adj1 component and extending adj1 arms and detachably and cage).clm.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/05/28 13:43
S2	420	((("CHEN") near3 ("Yu"))).INV. and transceiver	US-PGPUB; USPAT; USOCR	OR	OFF	2019/05/28 13:14
S3	29	((("CHEN") near3 ("Yu"))).INV. and (transceiver QSFP) and (arm spring cage)	US-PGPUB; USPAT; USOCR	OR	OFF	2019/05/28 13:15
S4	3	((("SHIU") near3 ("Hsuan-Chen"))).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/05/28 13:16
S5	22	((("YEH") near3 ("Che-Shou"))).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/05/28 13:17
S6	3	((("SHIU") near3 ("Hsuan-Chen"))).INV.	US-PGPUB; USPAT; USOCR;	OR	OFF	2019/05/28 13:18

			FPRS; EPO; JPO; DERWENT; IBM_TDB			
S7	23	((("YEH") near3 ("Che-Shou"))).INV. not S3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/05/28 13:18
S8	1	(14/504500).APP.	USPAT; USOCR	OR	OFF	2019/05/28 13:20
S9	6	("20110081114" "7201520").PN. OR ("9523826").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/05/28 13:20
S10	2	("20050191892" "20120106902").PN.	US-PGPUB; USPAT	OR	OFF	2019/05/28 13:23
S11	39	tavlykaev and transceiver	US-PGPUB; USPAT; USOCR	OR	OFF	2019/05/28 13:27
S12	5	("20140134898" "20170205591" "5915987" "7699641" "9472898").PN. OR ("10209462").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/05/28 13:31

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Application Number	16153685
Filing Date	2018-10-05
First Named Inventor	Chen, Yu
Art Unit	2649
Examiner Name	
Attorney Docket Number	AOIT015

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/RT/	1	20050191892	A1	2005-09-01	SHIGAMI ET AL	
/RT/	2	20120106902	A1	2012-05-03	THIRUGNANAM ET AL	

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(Not for submission under 37 CFR 1.99)

Application Number	16153685	
Filing Date	2018-10-05	
First Named Inventor	Chen, Yu	
Art Unit	2649	
Examiner Name		
Attorney Docket Number	AOIT015	

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
/RT/	1	United States Non-Final Office Action related to US Application No. 16/167,864 dated February 25, 2019.	

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EXAMINER SIGNATURE

Examiner Signature	/ROBERT TAVLYKAEV/	Date Considered	05/28/2019
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16153685
	Filing Date		2018-10-05
	First Named Inventor	Chen, Yu	
	Art Unit	2649	
	Examiner Name		
	Attorney Docket Number	AOIT015	

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STATEMENT BY APPLICANT**
(Not for submission under 37 CFR 1.99)

Application Number	16153685
Filing Date	2018-10-05
First Named Inventor	Chen, Yu
Art Unit	2649
Examiner Name	
Attorney Docket Number	AOIT015

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	United States Non-Final Office Action related to US Application No. 16/167,864 dated February 25, 2019.	

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Examiner Signature		Date Considered	
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**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
(Not for submission under 37 CFR 1.99)

Application Number	16153685
Filing Date	2018-10-05
First Named Inventor	Chen, Yu
Art Unit	2649
Examiner Name	
Attorney Docket Number	AOIT015

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

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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	/Kevin J. Carroll/	Date (YYYY-MM-DD)	2019-04-01
Name/Print	Kevin J. Carroll	Registration Number	36,384

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EFS ID:	35613441
Application Number:	16153685
International Application Number:	
Confirmation Number:	1014
Title of Invention:	OPTICAL TRANSCEIVER
First Named Inventor/Applicant Name:	Yu CHEN
Customer Number:	27543
Filer:	Kevin J. Carroll/April Davis
Filer Authorized By:	Kevin J. Carroll
Attorney Docket Number:	AOIT015
Receipt Date:	03-APR-2019
Filing Date:	05-OCT-2018
Time Stamp:	12:03:59
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	IDS.pdf	612064	no	4
			2f78cf82f1e9cb638fe62cebeefc86991e8eff1e		

Warnings:

Information:					
2	Other Reference-Patent/App/Search documents	Office_Action_022519.pdf	378286	no	11
			b22bfc3379f10e9efb7d0783b94ad65f4c065cf6		
Warnings:					
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Total Files Size (in bytes):			990350		
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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
16/153,685	10/05/2018	2649	1720	AOIT015	11	2

CONFIRMATION NO. 1014

FILING RECEIPT

27543
APPLIED OPTOELECTRONICS, INC.
13115 JESS PIRTLE BLVD.
SUGAR LAND, TX 77478



Date Mailed: 10/30/2018

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Inventor(s)

Yu CHEN, New Taipei City, TAIWAN;
Hsuan-Chen SHIU, New Taipei City, TAIWAN;
Che-Shou YEH, New Taipei City, TAIWAN;

Applicant(s)

Prime World International Holdings Ltd., New Taipei City, TAIWAN;

Power of Attorney: The patent practitioners associated with Customer Number 32047

Domestic Applications for which benefit is claimed - None.

A proper domestic benefit claim must be provided in an Application Data Sheet in order to constitute a claim for domestic benefit. See 37 CFR 1.76 and 1.78.

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.

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If Required, Foreign Filing License Granted: 10/26/2018

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 16/153,685**

Projected Publication Date: 04/09/2020

Non-Publication Request: No

Early Publication Request: No

Title

OPTICAL TRANSCEIVER

Preliminary Class

455

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

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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875						Application or Docket Number 16/153,685	
APPLICATION AS FILED - PART I							
(Column 1)		(Column 2)		SMALL ENTITY		OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE(\$)	FEE(\$)		RATE(\$)	FEE(\$)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	300
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A			N/A	660
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	760
TOTAL CLAIMS (37 CFR 1.16(j))	11	minus 20 = *			OR	x 100 =	0.00
INDEPENDENT CLAIMS (37 CFR 1.16(h))	2	minus 3 = *				x 460 =	0.00
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).							0.00
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							0.00
			TOTAL			TOTAL	1720
* If the difference in column 1 is less than zero, enter "0" in column 2.							
APPLICATION AS AMENDED - PART II							
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY	
AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)
	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))					OR	
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					OR	
			TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY	
AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)
	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))					OR	
	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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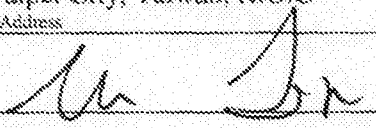
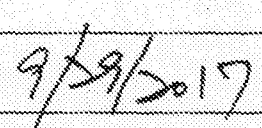
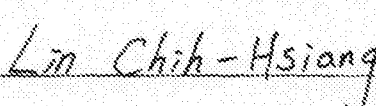
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New Taipei City, Taiwan, R.O.C	
Applicant Address	
Signature 	Date 
Name 	
Title 	

OPTICAL TRANSCEIVER

Technical Field

The disclosure relates to an optical communication device, more particularly to a pluggable optical transceiver.

5 Background

Optical transceivers are generally installed in electronic communication facilities in modern high-speed communication networks. In order to make flexible the design of an electronic communication facility and less burdensome the maintenance of the same, an optical transceiver is inserted into a corresponding cage that is disposed in the
10 communication facility in a pluggable manner. In order to define the electrical-to-mechanical interface of the optical transceiver and the corresponding cage, different specifications such as XFP (10 Gigabit Small Form Factor Pluggable) used in 10 GB/s communication rate, QSFP (Quad Small Form-factor Pluggable), or other form factors at different communication rates.

15 A fastening mechanism is provided for securely fixing the optical transceiver to the cage. On the other hand, the optical transceiver must include a releasing mechanism so that the optical transceiver could be released from the cage smoothly when necessary.

SUMMARY

According to one aspect of the present disclosure, an optical transceiver is disclosed.
20 Such disclosed optical transceiver in one embodiment includes a main body, an elastic component and a fastening component. The main body includes two lateral surfaces and an outer surface between the two lateral surfaces, and the outer surface defines a confined groove. The elastic component is disposed in the confined groove. The fastening component is movably disposed on the main body. The fastening component includes a
25 linkage arm, two extending arms and a confined portion. The linkage arm is disposed on the

outer surface of the main body, and the two extending arms are connected with the linkage arm. The two extending arms are respectively disposed on the two lateral surfaces. The confined portion is connected with the linkage arm and extends in the confined groove in order to press the elastic component. The two extending arms are detachably fasten-able
5 with the cage.

According to another aspect of the present disclosure, an optical transceiver is disclosed. Such disclosed optical transceiver in one embodiment includes a main body, two elastic components and a fastening component. The main body includes two lateral surfaces and an outer surface between the two lateral surfaces, and the outer surface defines two
10 confined grooves spaced apart from each other. The two elastic components are disposed in the two confined grooves, respectively. The fastening component is movably disposed on the main body. The fastening component includes a linkage arm, two extending arms and two confined portions. The linkage arm is disposed on the outer surface of the main body, and the two extending arms are connected with the linkage arm. The two extending arms
15 are respectively disposed on the two lateral surfaces. The confined portions are connected with the linkage arm and are respectively extend into the two confined grooves in order to press the two elastic components. The two extending arms are detachably fasten-able with the cage.

BRIEF DESCRIPTION OF THE DRAWINGS

20 The present disclosure will become more fully understood from the detailed description given below and the accompanying drawings which are given by way of illustration only and thus are not intending to limit the present disclosure and wherein:

FIG. 1 is a perspective view of an optical transceiver and a cage according to a first embodiment of the present disclosure;

25 FIG. 2 is a partially enlarged view of the optical transceiver in FIG. 1, with a fastening component at a fastening position;

FIG. 3 is a partially enlarged cross-sectional view of the optical transceiver in FIG. 1, with the fastening component at a releasing position;

FIG. 4 is a perspective view of an optical transceiver according to a second embodiment of the present disclosure;

5 FIG. 5 is an exploded view of the optical transceiver in FIG. 4;

FIG. 6 is a partially enlarged cross-sectional view of the optical transceiver in FIG. 4 along line 6-6;

FIG. 7 is a partially enlarged cross-sectional view of the optical transceiver in FIG. 4 along line 7-7; and

10 FIG. 8 is a perspective view of the optical transceiver in FIG. 4, with a bail at an upright position.

DETAILED DESCRIPTION

In the following detailed description, for purposes of explanation, numerous specific details are set forth in order to provide a thorough understanding of the disclosed
15 embodiments. It will be apparent, however, that one or more embodiments may be practiced without these specific details. In other instances, well-known structures and devices are schematically shown in order to simplify the drawing.

Please refer to FIG. 1 and FIG. 2. FIG. 1 is a perspective view of an optical transceiver and a cage according to a first embodiment of the present disclosure. FIG. 2 is a partially
20 enlarged view of the optical transceiver in FIG. 1, with a fastening component at a fastening position. In this embodiment, an optical transceiver 10 is disclosed, and the optical transceiver 10 is inserted into a cage 20 in pluggable manner. The optical transceiver 10 includes a main body 100, a fastening component 200, a bail 300 and two elastic components 400.

The main body 100, for example, is a housing including a head portion 110 and an insertion portion 120 connected with each other. The insertion portion 120 is configured to be inserted into a plugging slot 22 of the cage 20. The head portion 110 of the optical transceiver 10 includes two lateral surfaces 130, two sliding rails and two confined grooves 140. The two sliding rails are respectively formed on the two lateral surfaces 130 and extend from the head part 110 to the insertion portion 120. The two confined grooves 140 are respectively formed on the two lateral surfaces 130 for accommodating the two elastic components 400.

The fastening component 200 includes a linkage arm 210 and two extending arms 220. The two extending arms 220 are respectively connected with two opposite ends of the linkage arm 210, such that the linkage arm 210 is located between the two extending arms 220. The two extending arms 220 are movably disposed on the sliding rails at the lateral surfaces 130, respectively. Each of the extending arms 220 includes a fastening portion 230 and a confined portion 240. The fastening portion 230 extends along a direction far away from the lateral surface 130 to be detachably fasten-able with the cage 20. The confined portion 240 extends into the confined groove 140 for pressing the elastic component 400.

The bail 300 is connected with the linkage arm 210 of the fastening component 200 and extends outside from the main body 100. The bail 300 is made of rubber and bendable to be in front of the head part 110 or on the top of the head part 110.

The elastic components 400 constantly press the confined portion 240 of the fastening component 200. It is worth noting that numbers of the confined grooves 140 and the elastic components 400 are not limited in view of embodiments in the present disclosure.

The fastening component 200 is movable relative to the main body 100 to be at either a fastening position (as shown in FIG. 2) and a releasing position (as shown in FIG. 3). Please refer to FIG. 2 and FIG. 3. FIG. 3 is a partially enlarged cross-sectional view of the optical transceiver in FIG. 1, with the fastening component at a releasing position.

In FIG. 2, the two elastic components 400 respectively press the two confined portions 240 so that the fastening component 200 could be located at the fastening position, and thus the fastening portions 230 are securely fastened with the cage 20. Therefore, the optical transceiver 10 is readily and reliably inserted into the plugging slot 22 of the cage 20.

5 The bail 300 is able to be drawn along the direction indicated by an arrow a. In FIG. 3, the fastening component 200 is moved by the bail 300 relative to the main body 200 to be at the releasing position. The fastening portion 230 presses a flexible arm 24 of the cage 20 so that the fastening component 200 slides along an inclined surface 231 of the fastening portion 230. The fastening portion 230 bends the flexible arm 24 to allow the fastening
10 component 200 to move to the releasing position. The insertion portion 120 of the main body 100 is removed from the cage 20 when the bail 300 is pulled much farther.

When the fastening component 200 is at the releasing position, the two confined portions 240 respectively compress the two elastic components 400. As the bail 300 is released, the elastic energy stored in the elastic components 400 drives the fastening
15 component 200 back to the fastening position.

The bail 300 could be moved around to be located above the head part 110 of the main body 100, creating some room for an optical fiber plug (not shown in the drawings) to be plugged into an optical fiber terminal 160 more conveniently.

In the first embodiment, that the bail 300 could help move the fastening component
20 200 renders possible the fastening component to fasten to or be released from the cage.

In the first embodiment, the elastic component 400 is disposed in the confined groove 140 which is formed on the lateral surface 130 of the main body 100, and the confined portion 240 of the extending arm 220 presses the elastic component 400. However, since the trend of evolution of the optical transceiver 10 somewhat focuses on the reduction in
25 size of the entire transceiver as well as the inside space of the main body 100. In order to form the confined grooves 140 on the lateral surfaces 130, the space inside the main body

100 is restricted in a width direction, such that it is unfavorable for the arrangement of electronic components such as multiple transmitters and multiple receivers.

Furthermore, the bail 300 could be moved around with respect to the main body 100 in the first embodiment. However, absent application of any external force may make the bail
5 300 simply go back to its initial position, such that extra maneuver of the bail 300 is required for any optical fiber to be plugged into the optical fiber terminal 160 (which might be a switch).

A configuration of the optical transceiver 10 could be improved. Please refer to FIG. 4 and FIG. 5. FIG. 4 is a perspective view of an optical transceiver according to a second
10 embodiment of the present disclosure. FIG. 5 is an exploded view of the optical transceiver in FIG. 4. In this embodiment, an optical transceiver 10a is a QSFP-DD (Quad Small Form-factor Pluggable Double Density) optical transceiver, and the optical transceiver 10 is configured to be inserted into a cage (not shown in the drawings) in pluggable manner. The optical transceiver 10a includes a main body 100a, a fastening component 200a, a bail 300a,
15 a pivot shaft 300b and two elastic components 400a.

Please further refer to FIG. 6 and FIG. 7. FIG. 6 is a partially enlarged cross-sectional view of the optical transceiver in FIG. 4 along line 6-6. FIG. 7 is a partially enlarged cross-sectional view of the optical transceiver in FIG. 4 along line 7-7. The main body 100a includes a head portion 110a and an insertion portion 120a connected with each other. The
20 head portion 110a of the main body 100a includes two lateral surfaces 130a, an outer surface 140a and an optical fiber terminal 160a. The outer surface 140a is between the two lateral surfaces 130a, and the outer surface 140a defines two confined grooves 150a which are spatially spaced apart from each other. The head portion 110a of the main body 100a further includes two first confined surfaces 170a with the two confined grooves 150a
25 formed respectively. In this embodiment, the outer surface 140a is a top surface on an upper cover of the main body 100a, but the disclosure is not limited thereto. In some other embodiments, the outer surface is a bottom surface on a bottom cover of the main body

100a. An accommodation space inside the main body 100a allows for placement of components such as the optical fiber terminal 160a, a circuit board, photodiodes, laser emitters, and IC chips.

5 The fastening component 200a is movably disposed on the main body 100a and includes a linkage arm 210a, two extending arms 220a and two confined portions 240a. The two extending arms 220a are respectively connected with two opposite ends of the linkage arm 210a, such that the linkage arm 210a is located between the two extending arms 220a. The two extending arms 220 are movably disposed on the lateral surfaces 130a respectively, and the extending arms 220 are detachably fasten-able with the cage. The linkage arm 210a
10 is disposed on the outer surface 140a of the main body 100a, and the linkage arm 210a includes two openings 250a respectively connected with the two confined groove 150a. The two confined portions 240a are connected with the linkage arm 210a, and the two confined portions 240a respectively extend into the confined grooves 150a. In this embodiment, a process of stamping is performed to cut and deform part of the linkage arm 210a to form the
15 confined portions 240a and the openings 250a of the fastening component 200a. The opening 250a is located in proximity of the confined portion 240a.

The pivot shaft 300b is pivoted on the linkage arm 210a of the fastening component 200a, and the bail 300a disposed on the pivot shaft 300b. FIG. 8 is a perspective view of the optical transceiver in FIG. 4, with a bail at an upright position. The bail 300a extends
20 outside from the main body 100a. When the bail 300a is at a horizontal position, the bail 300a protects the optical fiber terminal 160a from dust, and the insertion portion 120a of the main body 100a is removed from the cage when the horizontal bail 300a is drawn. The bail 300a could be moved from the horizontal position to an upright position so as render convenient installation or removal of the optical fibers without requiring the bail 300a being
25 held manually or by other means. With the pivot shaft 300b, the bail 300a could stay at the upright position even without any application of the external force to the bail 300a.

Each of the elastic components 400a, for example, is a spring compressed by the

confined portion 240a of the fastening component 200a. In detail, each confined portion 240a of the fastening component 200a includes a second confined surface 260a facing toward the first confined surface 170a of the main body 100a. The elastic component 400a is disposed between the first confined surface 170a and the second confined surface 260a.

- 5 When the fastening component 200a moves relative to the main body 100a, the confined portion 240a moves in the confined groove 150a and compresses the elastic component 400a.

It is worth noting that numbers of the confined grooves 150a, the extending arms 220a, the confined portions 240a, the openings 250a and the elastic components 400a are not
10 limited because of the embodiments discussed in the present disclosure.

The opening 250a of the fastening component 200a exposes the elastic component 400a to outside. In detail, a method of positioning the elastic component 400a in the confined groove 150a is to compress the elastic component 400a by hand, and then put the elastic component 400a into the confined groove 150a through the opening 250a. Therefore,
15 the elastic component 400a could be mounted or unmounted with more efficiency. As shown in FIG. 7, to maintain the position of the elastic component 400a, a size of the opening 250a is smaller than a length L1 of the elastic component 400a in an uncompressed condition. The uncompressed condition is a condition that the confined portion 240a of the fastening component 200a does not compress the elastic component 400a.

20 Furthermore, as shown in FIG. 5, the opening 250a is located between two ends 211a of the linkage arm 210a where the two extending arms 220a are respectively connected. Therefore, the opening 250a does not formed at an edge of the linkage arm 210a, such that it is favorable for an easier manufacture of the fastening component 200a since the edge of the linkage arm 210a is difficult to be processed due to higher internal stress.

25 According to the present disclosure, in the second embodiment, the elastic component 400a is disposed in the confined groove 150a, and the confined groove 150a is formed on the top surface of the main body 100a rather than on the lateral surface 130a. Therefore,

more accommodation space inside the main body 100a could be provided in a width direction W to accommodate electronic components for high-speed communication, thereby meeting the requirements of compact optical transceiver 10a and proper space utilization of the same.

5 The embodiments are chosen and described in order to best explain the principles of the present disclosure and its practical applications, to thereby enable others skilled in the art to best utilize the present disclosure and various embodiments with various modifications as are suited to the particular use that is being contemplated. It is intended that the scope of the present disclosure is defined by the following claims and their
10 equivalents.

CLAIMS

What is claimed is:

1. An optical transceiver, configured to be inserted into a cage in pluggable manner, comprising:
 - 5 a main body comprising two lateral surfaces and an outer surface between the two lateral surfaces, and the outer surface defining a confined groove;

an elastic component disposed in the confined groove; and

a fastening component movably disposed on the main body, the fastening component comprising a linkage arm, two extending arms and a confined portion, wherein the linkage
10 arm is disposed on the outer surface of the main body, the two extending arms are connected with the linkage arm, the two extending arms are respectively disposed on the two lateral surfaces, the confined portion is connected with the linkage arm and extends into the confined groove in order to press the elastic component, and the two extending arms are detachably fasten-able with the cage.
- 15 2. The optical transceiver according to claim 1, wherein the outer surface is either a top surface or a bottom surface of the main body.
3. The optical transceiver according to claim 1, wherein the main body comprises a first confined surface forming the confined groove, the confined portion of the fastening component comprises a second confined surface facing toward the first confined
20 surface, and the elastic component is disposed between the first confined surface and the second confined surface.
4. The optical transceiver according to claim 1, wherein the linkage arm comprises an opening connected with the confined groove of the main body.
5. The optical transceiver according to claim 4, wherein a size of the opening is smaller

than a length of the elastic component in an uncompressed condition.

6. The optical transceiver according to claim 4, wherein the opening is located between two ends of the linkage arm where the two extending arms are connected.
7. The optical transceiver according to claim 4, wherein the confined portion and the opening of the fastening component are formed by stamping.
8. The optical transceiver according to claim 1, wherein the main body comprises a head portion and an insertion portion connected with each other, the insertion portion is configured to be inserted into the cage in pluggable manner, the head portion comprises the outer surface, the two lateral surfaces and an optical fiber terminal.
9. The optical transceiver according to claim 1, further comprising a pivot shaft pivoted on the linkage arm of the fastening component and a bail connected with the pivot shaft.
10. The optical transceiver according to claim 1, wherein the optical transceiver is a QSFP-DD (Quad Small Form-factor Pluggable Double Density) optical transceiver.
11. An optical transceiver, comprising:

a main body comprising two lateral surfaces and an outer surface between the two lateral surfaces, and the outer surface defining two confined grooves spaced apart from each other;

two elastic components disposed in the two confined grooves, respectively; and

- a fastening component movably disposed on the main body, the fastening component comprising a linkage arm, two extending arms and two confined portions, wherein the linkage arm is disposed on the outer surface of the main body, the two extending arms are connected with the linkage arm, the two extending arms are respectively disposed on the two lateral surfaces, the confined portions are connected with the linkage arm and

respectively extend into the two confined grooves in order to press the two elastic components.

ABSTRACT

An optical transceiver includes a main body, an elastic component and a fastening component. The main body includes two lateral surfaces and an outer surface between the two lateral surfaces, and the outer surface defines a confined groove. The elastic component
5 is disposed in the confined groove. The fastening component is movably disposed on the main body. The fastening component includes a linkage arm, two extending arms and a confined portion. The linkage arm is disposed on the outer surface of the main body, and the two extending arms are connected with the linkage arm. The two extending arms are respectively disposed on the two lateral surfaces. The confined portion is connected with
10 the linkage arm and extends into the confined groove in order to press the elastic component. The two extending arms are detachably fasten-able with the cage.

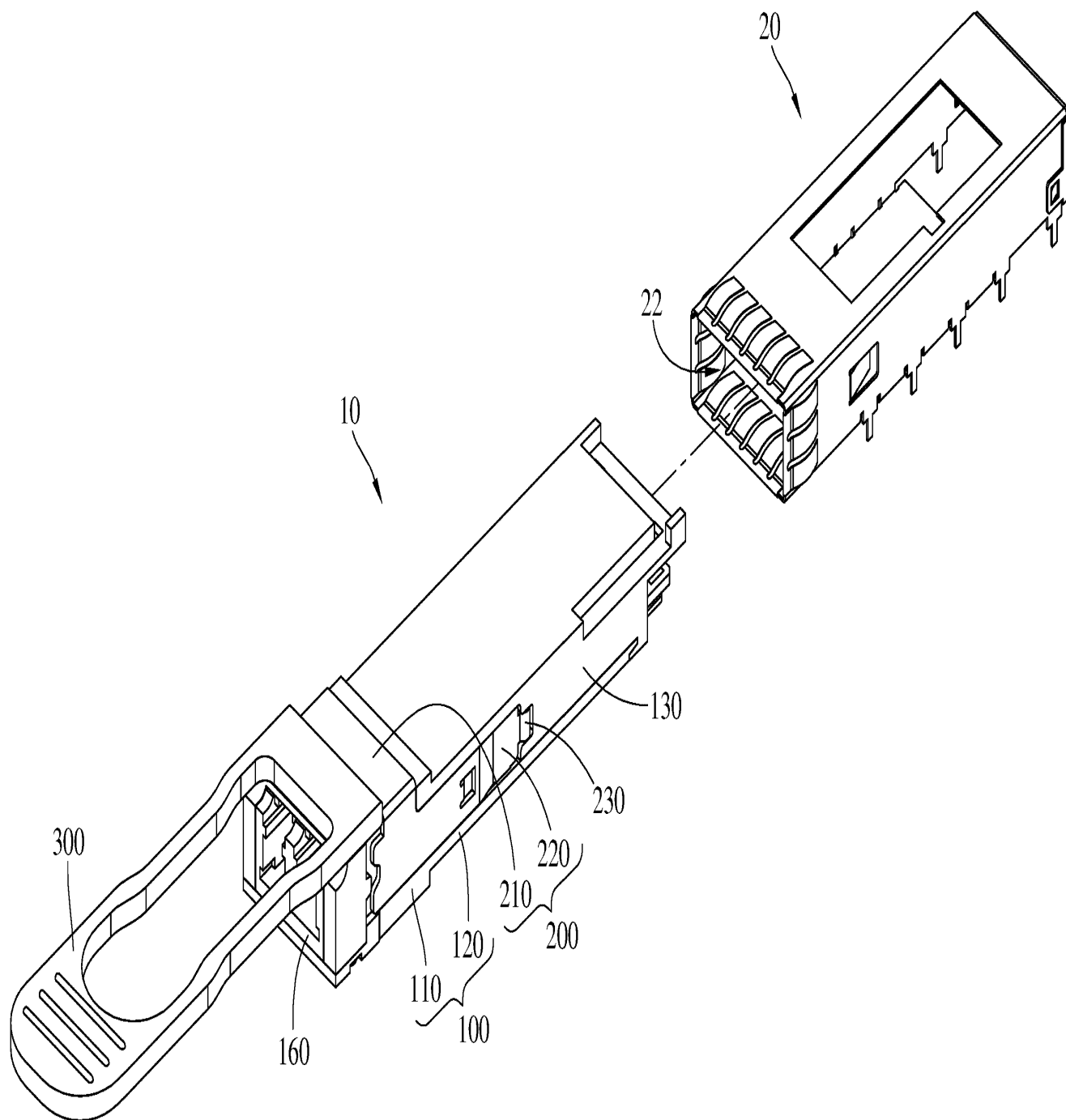


FIG. 1

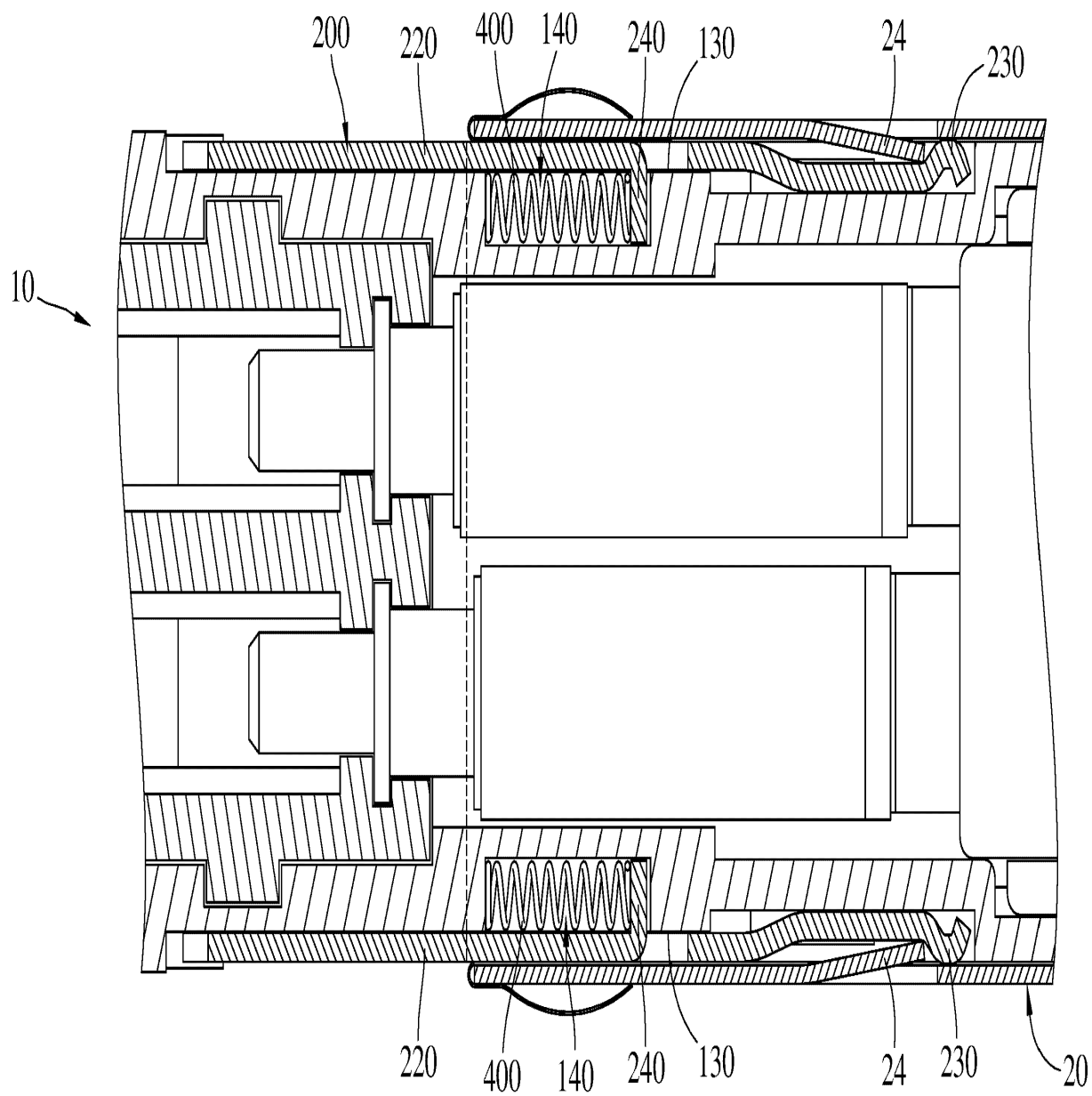


FIG. 2



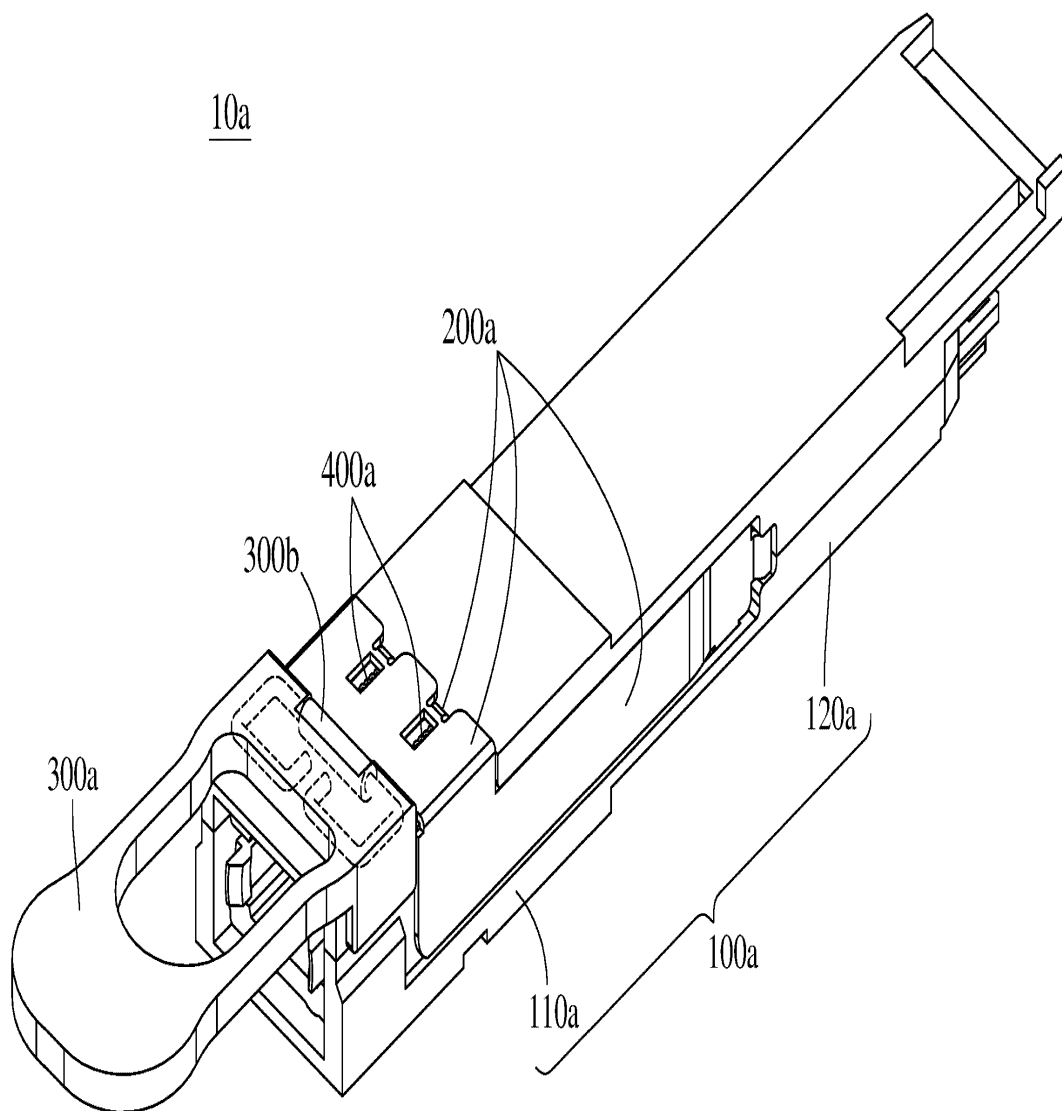


FIG. 4

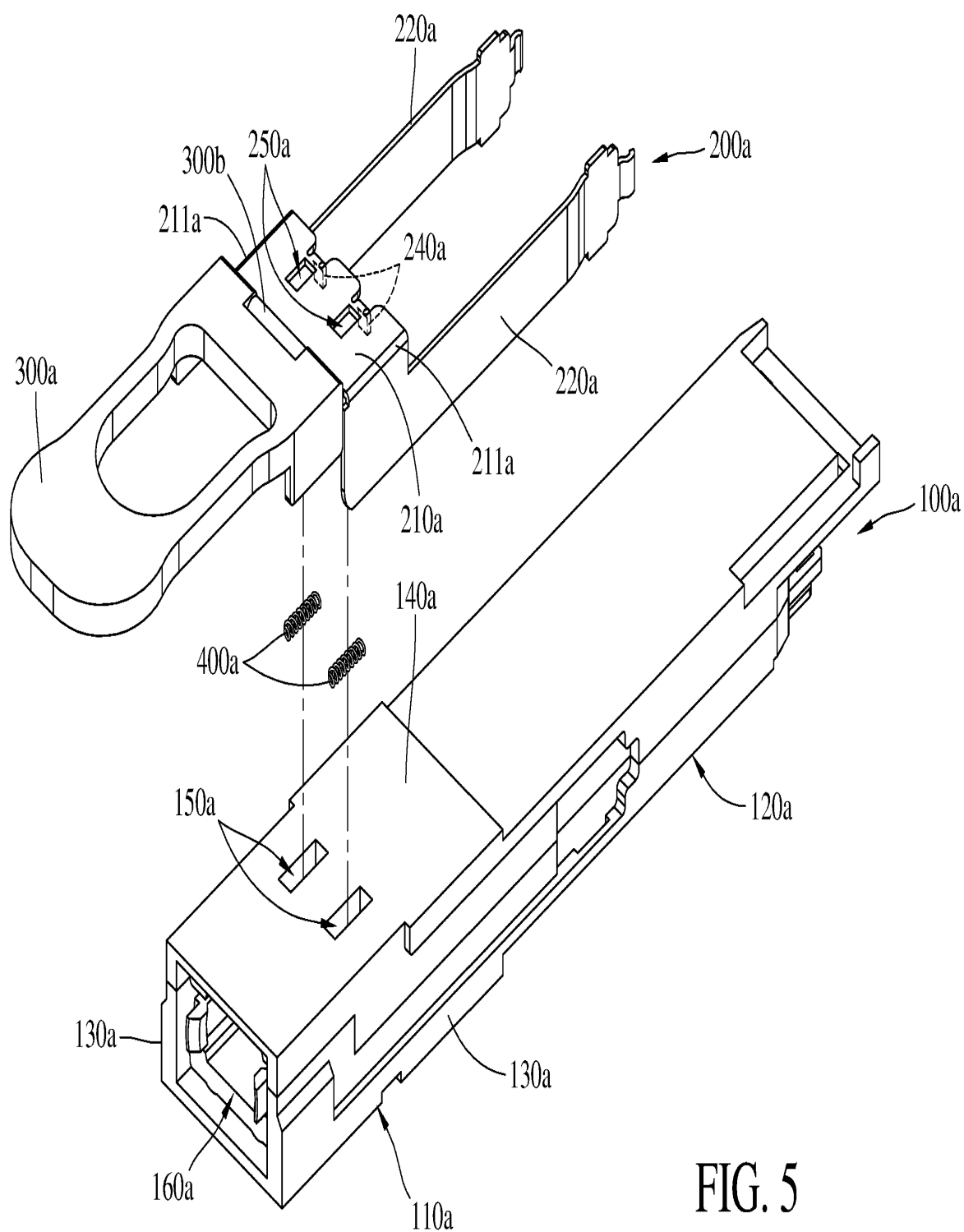


FIG. 5

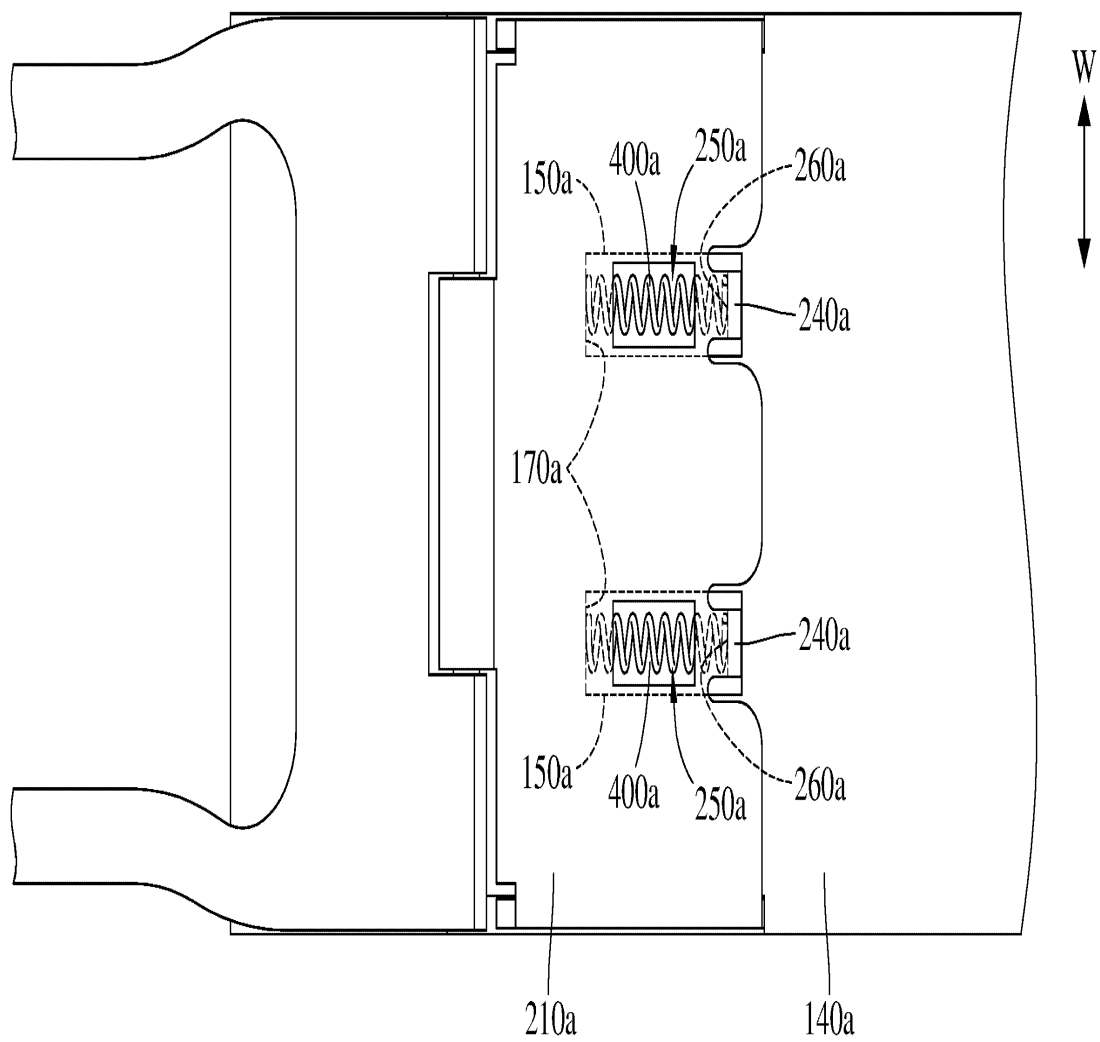


FIG. 6

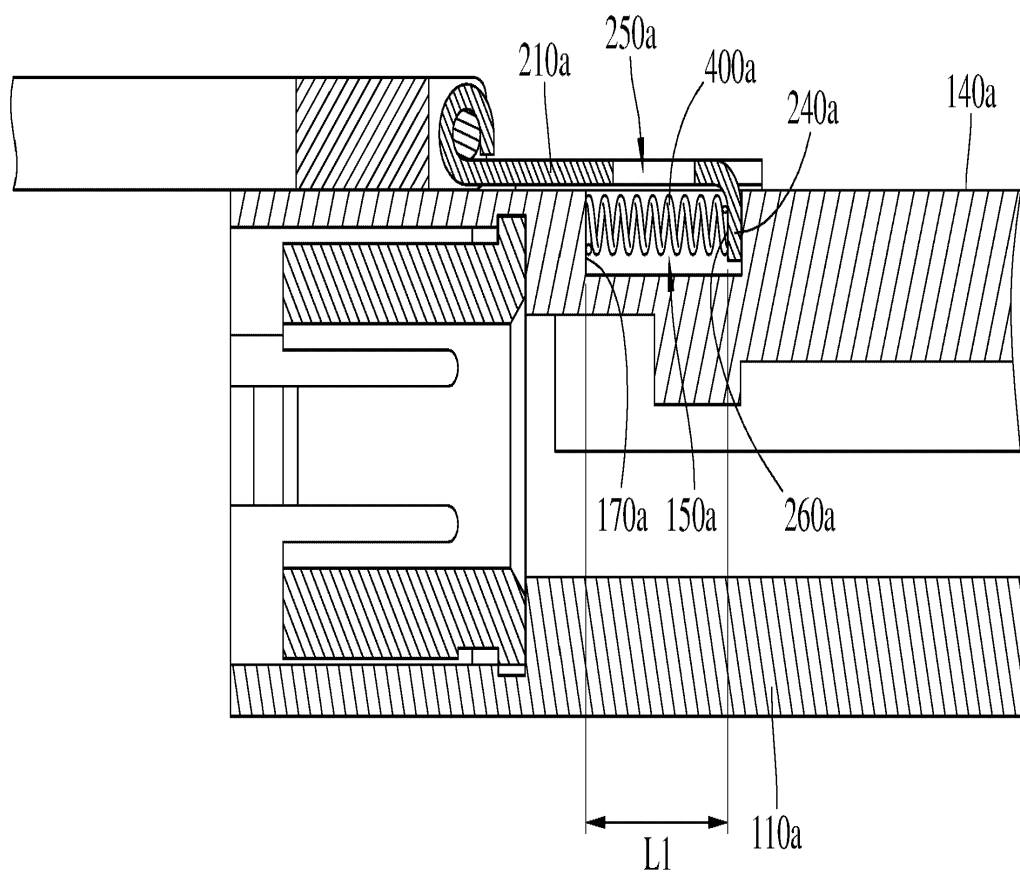


FIG. 7

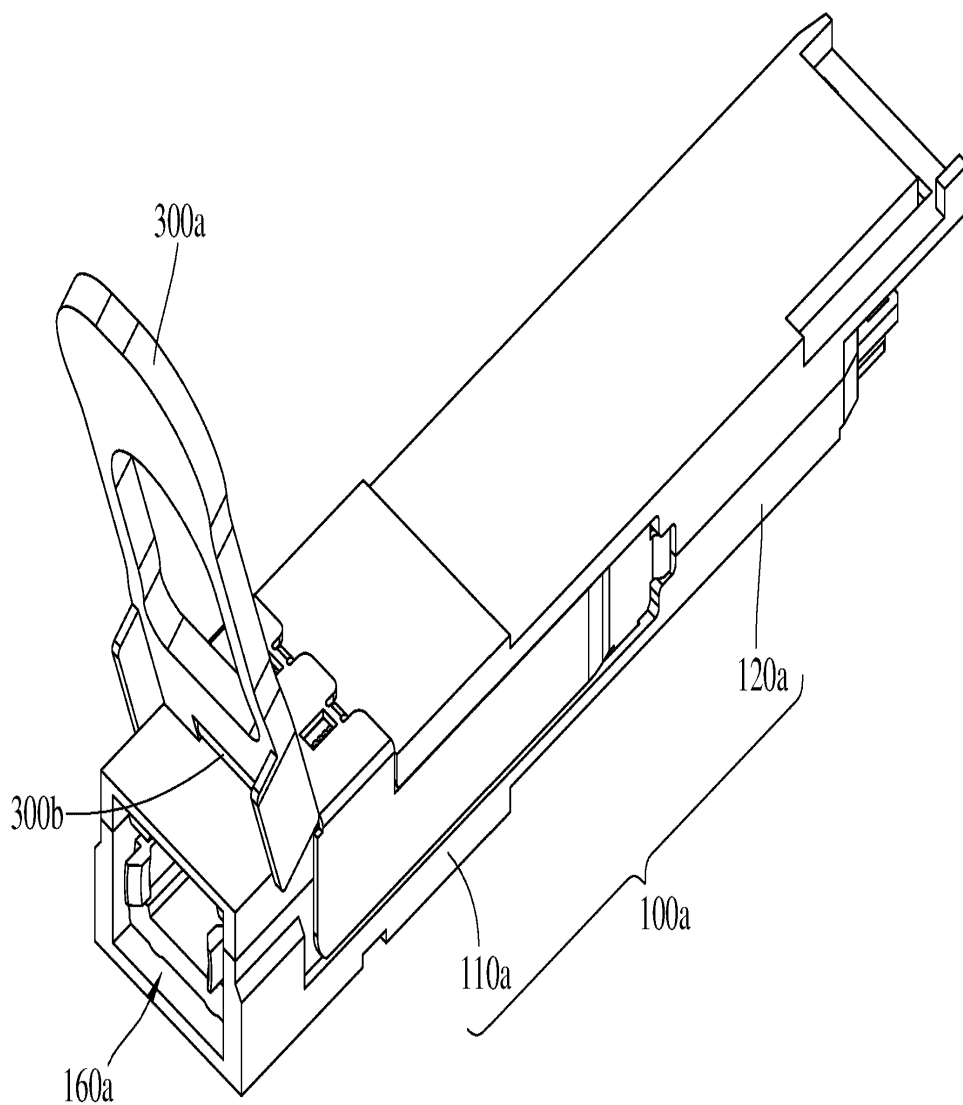


FIG. 8

Electronic Patent Application Fee Transmittal

Application Number:				
Filing Date:				
Title of Invention:	OPTICAL TRANSCEIVER			
First Named Inventor/Applicant Name:	Yu CHEN			
Filer:	Kevin J. Carroll/April Davis			
Attorney Docket Number:	AOIT015			
Filed as Large Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
UTILITY APPLICATION FILING	1011	1	300	300
UTILITY SEARCH FEE	1111	1	660	660
UTILITY EXAMINATION FEE	1311	1	760	760
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				1720

Electronic Acknowledgement Receipt

EFS ID:	33937708
Application Number:	16153685
International Application Number:	
Confirmation Number:	1014
Title of Invention:	OPTICAL TRANSCEIVER
First Named Inventor/Applicant Name:	Yu CHEN
Customer Number:	27543
Filer:	Kevin J. Carroll/April Davis
Filer Authorized By:	Kevin J. Carroll
Attorney Docket Number:	AOIT015
Receipt Date:	05-OCT-2018
Filing Date:	
Time Stamp:	22:49:09
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$ 1720
RAM confirmation Number	100918INTEFSW22510500
Deposit Account	501705
Authorized User	April Davis

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

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

37 CFR 1.17 (Patent application and reexamination processing fees)

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

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Application Data Sheet	AOIT015_ADS.pdf	1823013	no	9
			8823cd9f871318f1370b49263c05cd441399d959		
Warnings:					
Information:					
2	Oath or Declaration filed	Declaration.pdf	4025667	no	2
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Warnings:					
Information:					
3	Power of Attorney	Power_Attorney.pdf	1546850	no	1
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Warnings:					
Information:					
4		AOIT015_Application_asfiled_100518.pdf	56346	yes	13
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	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Specification		1	9	
	Claims		10	12	
	Abstract		13	13	
Warnings:					
Information:					
5	Drawings-only black and white line drawings	AOIT015_Drawings_asfiled.PDF	82741	no	8
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Warnings:					
Information:					
6	Fee Worksheet (SB06)	fee-info.pdf	34647	no	2
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Warnings:					
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Total Files Size (in bytes):				7569264	
<p>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.</p> <p><u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					

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	AOIT015
		Application Number	
Title of Invention	OPTICAL TRANSCEIVER		
<p>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.</p> <p>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.</p>			

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	
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Residence Information (Select One) US Residency ☒ Non US Residency Active US Military Service					
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Postal Code		Country ⁱ	TW		
Inventor	2				Remove
Legal Name					
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	Hsuan-Chen		SHIU		
Residence Information (Select One) US Residency ☒ Non US Residency Active US Military Service					
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Postal Code		Country ⁱ	TW		
Inventor	3				Remove
Legal Name					

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	AOIT015
		Application Number	
Title of Invention	OPTICAL TRANSCEIVER		

Prefix	Given Name	Middle Name	Family Name	Suffix
	Che-Shou		YEH	
Residence Information (Select One) US Residency ☒ Non US Residency Active US Military Service				
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City	New Taipei City	State/Province		
Postal Code		Country ⁱ	TW	
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.			
Customer Number	27543		
Email Address	kcarroll@gtp.com	Add Email	Remove Email

Application Information:

Title of the Invention	OPTICAL TRANSCEIVER		
Attorney Docket Number	AOIT015	Small Entity Status Claimed	☐
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	8	Suggested Figure for Publication (if any)	5

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 ⁱ

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	AOIT015
		Application Number	
Title of Invention	OPTICAL TRANSCEIVER		

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	27543		

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	<input type="text"/>	<input type="button" value="Remove"/>	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the Add button.			<input type="button" value="Add"/>

Foreign Priority Information:

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)¹ 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).

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	AOIT015
		Application Number	
Title of Invention	OPTICAL TRANSCEIVER		

			<input type="button" value="Remove"/>
Application Number	Country ⁱ	Filing Date (YYYY-MM-DD)	Access Code ^j (if applicable)
Additional Foreign Priority Data may be generated within this form by selecting the Add button.			<input type="button" value="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	AOIT015
		Application Number	
Title of Invention	OPTICAL TRANSCEIVER		

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	AOIT015
		Application Number	
Title of Invention	OPTICAL TRANSCEIVER		

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
<p>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.</p> <p style="text-align: right;">Clear</p>		
☒ 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:		
<div style="border: 1px solid black; height: 20px; width: 100%;"></div>		
Name of the Deceased or Legally Incapacitated Inventor: <div style="border: 1px solid black; height: 20px; width: 100%;"></div>		
If the Applicant is an Organization check here. ☒		
Organization Name	Prime World International Holdings Ltd.	
Mailing Address Information For Applicant:		
Address 1	No.18, Gong 4th Rd., Linkou District	
Address 2		
City	New Taipei City	State/Province
Country	TW	Postal Code
Phone Number		Fax Number
Email Address		
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.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	AOIT015
		Application Number	
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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.				
<input type="button" value="Remove"/>				
If the Assignee or Non-Applicant Assignee is an Organization check here. ☐				
Prefix	Given Name	Middle Name	Family Name	Suffix
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Mailing Address Information For Assignee including Non-Applicant Assignee:				
Address 1		<input type="text"/>		
Address 2		<input type="text"/>		
City	<input type="text"/>	State/Province	<input type="text"/>	
Country ⁱ	<input type="text"/>	Postal Code	<input type="text"/>	
Phone Number	<input type="text"/>	Fax Number	<input type="text"/>	
Email Address	<input type="text"/>			
Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button. <input type="button" value="Add"/>				

Signature:

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	/Kevin J. Carroll/		Date (YYYY-MM-DD)	2018-10-05
First Name	Kevin J.	Last Name	Carroll	Registration Number
				36384
Additional Signature may be generated within this form by selecting the Add button. <input type="button" value="Add"/>				

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	AOIT015
		Application Number	
Title of Invention	OPTICAL TRANSCEIVER		

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 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.

Declaration for United States Patent Application

TITLE OF APPLICATION: OPTICAL TRANSCEIVER

As a below named inventor, I hereby declare that:

This declaration is directed to:

☒ the attached application, or

☐ United States Application No. or PCT Application No. _____ filed on _____.

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 understand the contents of the application, including the claims, 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 C.F.R. § 1.56 (attached hereto).

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.

Full name of sole or first inventor Yu CHEN	
Sole or first inventor's signature Yu Chen	Date 10/02/2018

Full name of additional inventor, if any Che-Shou YEH	
Additional inventor's signature Che Shou Yeh	Date 10-02-18

Full name of additional inventor, if any Hsuan-Chen SHIU	
Additional inventor's signature Hsuan-Chen SHIU	Date 2018/10/02

§ 1.56 Duty to disclose information material to patentability.

(a) A patent by its very nature is affected with a public interest. The public interest is best served, and the most effective patent examination occurs when, at the time an application is being examined, the Office is aware of and evaluates the teachings of all information material to patentability. Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in this section. The duty to disclose information exists with respect to each pending claim until the claim is canceled or withdrawn from consideration, or the application becomes abandoned. Information material to the patentability of a claim that is canceled or withdrawn from consideration need not be submitted if the information is not material to the patentability of any claim remaining under consideration in the application. There is no duty to submit information which is not material to the patentability of any existing claim. The duty to disclose all information known to be material to patentability is deemed to be satisfied if all information known to be material to patentability of any claim issued in a patent was cited by the Office or submitted to the Office in the manner prescribed by §§ 1.97(b)-(d) and 1.98. However, no patent will be granted on an application in connection with which fraud on the Office was practiced or attempted or the duty of disclosure was violated through bad faith or intentional misconduct. The Office encourages applicants to carefully examine:

- (1) prior art cited in search reports of a foreign patent office in a counterpart application, and
- (2) the closest information over which individuals associated with the filing or prosecution of a patent application believe any pending claim patentably defines, to make sure that any material information contained therein is disclosed to the Office.

(b) Under this section, information is material to patentability when it is not cumulative to information already of record or being made of record in the application, and

- (1) It establishes, by itself or in combination with other information, a *prima facie* case of unpatentability of a claim; or
- (2) It refutes, or is inconsistent with, a position the applicant takes in:
 - (i) Opposing an argument of unpatentability relied on by the Office, or
 - (ii) Asserting an argument of patentability.

A *prima facie* case of unpatentability is established when the information compels a conclusion that a claim is unpatentable under the preponderance of evidence, burden-of-proof standard, giving each term in the claim its broadest reasonable construction consistent with the specification, and before any consideration is given to evidence which may be submitted in an attempt to establish a contrary conclusion of patentability.

(c) Individuals associated with the filing or prosecution of a patent application within the meaning of this section are:

- (1) Each inventor named in the application;
- (2) Each attorney or agent who prepares or prosecutes the application; and
- (3) Every other person who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, with the assignee or with anyone to whom there is an obligation to assign the application.

(d) Individuals other than the attorney, agent or inventor may comply with this section by disclosing information to the attorney, agent, or inventor.