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| APPLICATION<br>NUMBER | FILING or<br>371(c) DATE | GRP ART<br>UNIT | FIL FEE REC'D | ATTY. DOCKET NO | TOT CLAIMS | IND CLAIMS |
|-----------------------|--------------------------|-----------------|---------------|-----------------|------------|------------|
| 62/640,914            | 03/09/2018               |                 | 280           | AFLIG-120-P2    |            |            |

22827  
DORITY & MANNING, P.A.  
POST OFFICE BOX 1449  
GREENVILLE, SC 29602-1449

CONFIRMATION NO. 4974  
FILING RECEIPT



Date Mailed: 03/14/2018

Receipt is acknowledged of this provisional patent application. It will not be examined for patentability and will become abandoned not later than twelve months after its filing date. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

**Inventor(s)**

Aran James Russell, Chesham, UNITED KINGDOM;  
Asher Leong Raven, Milton Keynes, UNITED KINGDOM;

**Applicant(s)**

AFL IG LLC, Duncan, SC;

**Power of Attorney:**

Thomas Huycke--63096

**Permission to Access Application via Priority Document Exchange:** Yes

**Permission to Access Search Results:** Yes

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

**If Required, Foreign Filing License Granted:** 03/13/2018

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 62/640,914**

**Projected Publication Date:** None, application is not eligible for pre-grant publication

**Non-Publication Request:** No

**Early Publication Request:** No

**Title**

PUSH-PULL BOOT CONNECTOR

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

page 1 of 3

## PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

### LICENSE FOR FOREIGN FILING UNDER

#### Title 35, United States Code, Section 184

#### Title 37, Code of Federal Regulations, 5.11 & 5.15

#### **GRANTED**

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

#### **NOT GRANTED**

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

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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 U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop technology, manufacture products, deliver services, and grow your business, visit <http://www.SelectUSA.gov> or call +1-202-482-6800.

## TRANSMITTAL FOR POWER OF ATTORNEY TO ONE OR MORE REGISTERED PRACTITIONERS

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

|                        |                          |
|------------------------|--------------------------|
| Application Number     | Filing Herewith          |
| Filing Date            | 3-9-2018                 |
| First Named Inventor   | Aran Davidson            |
| Title                  | PUSH-PULL BOOT CONNECTOR |
| Art Unit               | Unknown                  |
| Examiner Name          | Unknown                  |
| Attorney Docket Number | AFLIG-120-P2             |

### SIGNATURE of Applicant or Patent Practitioner

|                                                    |                    |                     |          |
|----------------------------------------------------|--------------------|---------------------|----------|
| Signature                                          | /Thomas D. Huycke/ | Date (Optional)     | 3-9-2018 |
| Name                                               | Thomas D. Huycke   | Registration Number | 63,096   |
| Title (if Applicant is a juristic entity)          |                    |                     |          |
| Applicant Name (if Applicant is a juristic entity) |                    |                     |          |

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



\*Total of 2 forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

## POWER OF ATTORNEY BY APPLICANT

I hereby revoke all previous powers of attorney given in the application identified in either the attached transmittal letter or the boxes below.

Application Number

Filing Date

(Note: The boxes above may be left blank if information is provided on form PTO/AIA/82A.)



I hereby appoint the Patent Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above:

22827

OR



I hereby appoint Practitioner(s) named in the attached list (form PTO/AIA/82C) as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the patent application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above. (Note: Complete form PTO/AIA/82C.)

Please recognize or change the correspondence address for the application identified in the attached transmittal letter or the boxes above to:



The address associated with the above-mentioned Customer Number

OR



The address associated with Customer Number:

OR



Firm or Individual Name

Dority & Manning, P.A.

Address

P.O. Box 1449

City

Greenville

State

SC

Zip

29602

Country

US

Telephone

864-271-1582

Email

dorcketing@dority-manning.com

I am the Applicant (if the Applicant is a juristic entity, list the Applicant name in the box):

AFL IG LLC



Inventor or Joint Inventor (title not required below)



Legal Representative of a Deceased or Legally Incapacitated Inventor (title not required below)



Assignee or Person to Whom the Inventor is Under an Obligation to Assign (provide signer's title if applicant is a juristic entity)



Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document) (provide signer's title if applicant is a juristic entity)

### SIGNATURE of Applicant for Patent

The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

Signature

*Steve Althoff*

Date (Optional)

1-30-18

Name

Steve Althoff

Title

President, AFL IG LLC

**NOTE:** Signature - This form must be signed by the applicant in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. If more than one applicant, use multiple forms.



Total of 1 forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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

## 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.

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.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                          |                        |              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|------------------------|--------------|
| <b>Application Data Sheet 37 CFR 1.76</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                          | Attorney Docket Number | AFLIG-120-P2 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                          | Application Number     |              |
| Title of Invention                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | PUSH-PULL BOOT CONNECTOR |                        |              |
| <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:**

|                                                                                                                                                                                 |                                     |                                          |                    |               |                        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|------------------------------------------|--------------------|---------------|------------------------|
| <b>Inventor 1</b>                                                                                                                                                               |                                     |                                          |                    |               | <a href="#">Remove</a> |
| <b>Legal Name</b>                                                                                                                                                               |                                     |                                          |                    |               |                        |
| <b>Prefix</b>                                                                                                                                                                   | <b>Given Name</b>                   | <b>Middle Name</b>                       | <b>Family Name</b> | <b>Suffix</b> |                        |
|                                                                                                                                                                                 | Aran                                | James                                    | Russell            |               |                        |
| <b>Residence Information (Select One)</b> <input type="radio"/> US Residency <input checked="" type="radio"/> Non US Residency <input type="radio"/> Active US Military Service |                                     |                                          |                    |               |                        |
| <b>City</b>                                                                                                                                                                     | Chesham                             | <b>Country of Residence <sup>i</sup></b> | UK                 |               |                        |
| <b>Mailing Address of Inventor:</b>                                                                                                                                             |                                     |                                          |                    |               |                        |
| <b>Address 1</b>                                                                                                                                                                | 12 George Street                    |                                          |                    |               |                        |
| <b>Address 2</b>                                                                                                                                                                |                                     |                                          |                    |               |                        |
| <b>City</b>                                                                                                                                                                     | Chesham                             | <b>State/Province</b>                    | Buckinghamshire    |               |                        |
| <b>Postal Code</b>                                                                                                                                                              | HP5 3EJ                             | <b>Country <sup>i</sup></b>              | UK                 |               |                        |
| <b>Inventor 2</b>                                                                                                                                                               |                                     |                                          |                    |               | <a href="#">Remove</a> |
| <b>Legal Name</b>                                                                                                                                                               |                                     |                                          |                    |               |                        |
| <b>Prefix</b>                                                                                                                                                                   | <b>Given Name</b>                   | <b>Middle Name</b>                       | <b>Family Name</b> | <b>Suffix</b> |                        |
|                                                                                                                                                                                 | Asher                               | Leong                                    | Raven              |               |                        |
| <b>Residence Information (Select One)</b> <input type="radio"/> US Residency <input checked="" type="radio"/> Non US Residency <input type="radio"/> Active US Military Service |                                     |                                          |                    |               |                        |
| <b>City</b>                                                                                                                                                                     | Milton Keynes                       | <b>Country of Residence <sup>i</sup></b> | UK                 |               |                        |
| <b>Mailing Address of Inventor:</b>                                                                                                                                             |                                     |                                          |                    |               |                        |
| <b>Address 1</b>                                                                                                                                                                | 114 Pickering Drive, Emerson Valley |                                          |                    |               |                        |
| <b>Address 2</b>                                                                                                                                                                |                                     |                                          |                    |               |                        |
| <b>City</b>                                                                                                                                                                     | Milton Keynes                       | <b>State/Province</b>                    | Buckinghamshire    |               |                        |
| <b>Postal Code</b>                                                                                                                                                              | MK4 2EF                             | <b>Country <sup>i</sup></b>              | UK                 |               |                        |
| All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the <b>Add</b> button.                                     |                                     |                                          |                    |               | <a href="#">Add</a>    |

**Correspondence Information:**

|                                           |                          |                        |              |
|-------------------------------------------|--------------------------|------------------------|--------------|
| <b>Application Data Sheet 37 CFR 1.76</b> |                          | Attorney Docket Number | AFLIG-120-P2 |
|                                           |                          | Application Number     |              |
| Title of Invention                        | PUSH-PULL BOOT CONNECTOR |                        |              |

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 | 22827                        |                                          |                                             |
| Email Address   | docketing@dority-manning.com | <input type="button" value="Add Email"/> | <input type="button" value="Remove Email"/> |

## Application Information:

|                                         |                          |                                           |                          |
|-----------------------------------------|--------------------------|-------------------------------------------|--------------------------|
| Title of the Invention                  | PUSH-PULL BOOT CONNECTOR |                                           |                          |
| Attorney Docket Number                  | AFLIG-120-P2             | Small Entity Status Claimed               | <input type="checkbox"/> |
| Application Type                        | Provisional              |                                           |                          |
| Subject Matter                          | Utility                  |                                           |                          |
| Total Number of Drawing Sheets (if any) | 13                       | Suggested Figure for Publication (if any) |                          |

## Filing By Reference:

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

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

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

## Publication Information:

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

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

## Representative Information:

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

|                    |                                                  |                                              |                                                         |
|--------------------|--------------------------------------------------|----------------------------------------------|---------------------------------------------------------|
| Please Select One: | <input checked="" type="radio"/> Customer Number | <input type="radio"/> US Patent Practitioner | <input type="radio"/> Limited Recognition (37 CFR 11.9) |
| Customer Number    | 22827                                            | 8                                            |                                                         |

|                                           |                          |                        |              |
|-------------------------------------------|--------------------------|------------------------|--------------|
| <b>Application Data Sheet 37 CFR 1.76</b> |                          | Attorney Docket Number | AFLIG-120-P2 |
|                                           |                          | Application Number     |              |
| Title of Invention                        | PUSH-PULL BOOT CONNECTOR |                        |              |

## 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 |                 | <a href="#">Remove</a>   |                                    |
| Application Number       | Continuity Type | Prior Application Number | Filing or 371(c) Date (YYYY-MM-DD) |
|                          |                 |                          |                                    |

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

## 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)<sup>i</sup> 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 Number | Country <sup>i</sup> | Filing Date (YYYY-MM-DD) | <a href="#">Remove</a> | Access Code <sup>j</sup> (if applicable) |
|                    |                      |                          |                        |                                          |

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

## 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.

|                                           |                          |                        |              |
|-------------------------------------------|--------------------------|------------------------|--------------|
| <b>Application Data Sheet 37 CFR 1.76</b> |                          | Attorney Docket Number | AFLIG-120-P2 |
|                                           |                          | Application Number     |              |
| Title of Invention                        | PUSH-PULL BOOT CONNECTOR |                        |              |

## 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.

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.

|                                           |                          |                        |              |
|-------------------------------------------|--------------------------|------------------------|--------------|
| <b>Application Data Sheet 37 CFR 1.76</b> |                          | Attorney Docket Number | AFLIG-120-P2 |
|                                           |                          | Application Number     |              |
| Title of Invention                        | PUSH-PULL BOOT CONNECTOR |                        |              |

## 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**

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.

☒ Assignee
 ☐ Legal Representative under 35 U.S.C. 117
 ☐ Joint Inventor

☐ Person to whom the inventor is obligated to assign.
 ☐ Person who shows sufficient proprietary interest

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

Name of the Deceased or Legally Incapacitated Inventor:

If the Applicant is an Organization check here. ☒

Organization Name

**Mailing Address Information For Applicant:**

Address 1

Address 2

City  State/Province

Country  Postal Code

Phone Number  Fax Number

Email Address

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

## 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.

|                                           |                          |                        |              |
|-------------------------------------------|--------------------------|------------------------|--------------|
| <b>Application Data Sheet 37 CFR 1.76</b> |                          | Attorney Docket Number | AFLIG-120-P2 |
|                                           |                          | Application Number     |              |
| Title of Invention                        | PUSH-PULL BOOT CONNECTOR |                        |              |

**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.

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

|        |            |             |             |        |
|--------|------------|-------------|-------------|--------|
| Prefix | Given Name | Middle Name | Family Name | Suffix |
|        |            |             |             |        |

**Mailing Address Information For Assignee including Non-Applicant Assignee:**

|                      |  |                |  |
|----------------------|--|----------------|--|
| Address 1            |  |                |  |
| Address 2            |  |                |  |
| City                 |  | State/Province |  |
| Country <sup>i</sup> |  | Postal Code    |  |
| Phone Number         |  | Fax Number     |  |
| Email Address        |  |                |  |

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

**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  | /Thomas D. Huycke/ |           | Date (YYYY-MM-DD) | 2018-03-09                |
| First Name | Thomas D.          | Last Name | Huycke            | Registration Number 63096 |

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

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.

|                                           |                          |                        |              |
|-------------------------------------------|--------------------------|------------------------|--------------|
| <b>Application Data Sheet 37 CFR 1.76</b> |                          | Attorney Docket Number | AFLIG-120-P2 |
|                                           |                          | Application Number     |              |
| Title of Invention                        | PUSH-PULL BOOT CONNECTOR |                        |              |

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.

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

|                   |                             |   |                  |              |
|-------------------|-----------------------------|---|------------------|--------------|
| Application of:   | Filed Herewith              | ) | Examiner:        | Unknown      |
| Serial Number:    | Unknown                     | ) | Group Art Unit:  | Unknown      |
| Filed:            | March 9, 2018               | ) | Customer Number: | 22827        |
| Confirmation No.: | Unknown                     | ) | Deposit Account: | 04-1403      |
| Title:            | PUSH-PULL BOOT<br>CONNECTOR | ) | Docket Number:   | AFLIG-120-P2 |

### CERTIFICATE OF ELECTRONIC SUBMISSION

I hereby certify that this paper and all attachments and any fee are being transmitted via the internet to the U.S. Patent and Trademark Office via the Electronic Filing System on March 9, 2018.

Beth Looper

(Typed or printed name of person transmitting paper or fee)

Beth Looper

(Signature of person transmitting paper or fee)

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

|                   |                             |   |                  |              |
|-------------------|-----------------------------|---|------------------|--------------|
| Application of:   | Filed Herewith              | ) | Examiner:        | Unknown      |
|                   |                             | ) |                  |              |
| Serial Number:    | Filed Herewith              | ) | Group Art Unit:  | Unknown      |
|                   |                             | ) |                  |              |
| Filed:            | March 9, 2018               | ) | Customer Number: | 22827        |
|                   |                             | ) |                  |              |
| Confirmation No.: | Unknown                     | ) | Deposit Account: | 04-1403      |
|                   |                             | ) |                  |              |
| Title:            | PUSH-PULL BOOT<br>CONNECTOR | ) | Docket Number:   | AFLIG-120-P2 |

### DEPOSIT ACCOUNT AUTHORIZATION

Dear Sir:

The Commissioner is hereby authorized to charge any fee specifically authorized hereafter, or any fees in addition to the fee(s) filed, or asserted to be filed, or which should have been filed herewith or concerning any paper filed hereafter, and which may be required under 37 C.F.R. §§ 1.16-18 (deficiency only) now or hereafter in this application and in the resulting official document under 37 C.F.R. § 1.20, or credit any overpayment, to our Deposit Account No. 04-1403. This statement does not authorize charge of the issue fee in this case.

If any extension of time is required under 37 C.F.R. § 1.136 or otherwise in connection with any of the above and not accounted for elsewhere, such extension is hereby requested and any fees incurred thereby should also be charged to Deposit Account No. 04-1403.

Sincerely,

DORITY & MANNING, P.A.

/Thomas D. Huycke/

Thomas D. Huycke  
Registration Number: 63096  
P.O. Box 1449  
Greenville, SC 29602  
Telephone: (864) 271-1592  
Facsimile: (864) 233-7342

March 9, 2018

Date

**Provisional Application for Patent Cover Sheet**

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53(c)

**Inventor(s)**

Inventor 1

Remove

Given Name

Middle Name

Family Name

City

State

Country |

Aran

Davidson

Chesham

UK

Inventor 2

Remove

Given Name

Middle Name

Family Name

City

State

Country |

Asher

Raven

Milton Keynes

UK

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

Add

**Title of Invention**

PUSH-PULL BOOT CONNECTOR

Attorney Docket Number (if applicable)

AFLIG-120-P2

**Correspondence Address**

Direct all correspondence to (select one):

☒ The address corresponding to Customer Number☐ Firm or Individual Name

Customer Number

22827

The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.

☒ No.☐ Yes, the invention was made by an agency of the United States Government. The U.S. Government agency name is:☐ Yes, the invention was under a contract with an agency of the United States Government. The name of the U.S. Government agency and Government contract number are:

**Entity Status****Applicant asserts small entity status under 37 CFR 1.27 or applicant certifies micro entity status under 37 CFR 1.29**

- ☐ Applicant asserts small entity status under 37 CFR 1.27
- ☐ Applicant certifies micro entity status under 37 CFR 1.29. Applicant must attach form PTO/SB/15A or B or equivalent.
- ☒ No

**Warning**

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

**Signature**

Please see 37 CFR 1.4(d) for the form of the signature.

|            |                                 |           |        |                                      |            |
|------------|---------------------------------|-----------|--------|--------------------------------------|------------|
| Signature  | /thomas d. huycke, reg # 63096/ |           |        | Date (YYYY-MM-DD)                    | 2018-03-09 |
| First Name | Thomas D.                       | Last Name | Huycke | Registration Number (If appropriate) | 63096      |

This collection of information is required by 37 CFR 1.51. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 8 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. This form can only be used when in conjunction with EFS-Web. If this form is mailed to the USPTO, it may cause delays in handling the provisional application.**

## 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 a n other 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.

## Electronic Patent Application Fee Transmittal

|                                             |                          |                 |               |                             |
|---------------------------------------------|--------------------------|-----------------|---------------|-----------------------------|
| <b>Application Number:</b>                  |                          |                 |               |                             |
| <b>Filing Date:</b>                         |                          |                 |               |                             |
| <b>Title of Invention:</b>                  | PUSH-PULL BOOT CONNECTOR |                 |               |                             |
| <b>First Named Inventor/Applicant Name:</b> | Aran James Russell       |                 |               |                             |
| <b>Filer:</b>                               | Thomas D. Huycke         |                 |               |                             |
| <b>Attorney Docket Number:</b>              | AFLIG-120-P2             |                 |               |                             |
| Filed as Large Entity                       |                          |                 |               |                             |
| <b>Filing Fees for Provisional</b>          |                          |                 |               |                             |
| <b>Description</b>                          | <b>Fee Code</b>          | <b>Quantity</b> | <b>Amount</b> | <b>Sub-Total in USD(\$)</b> |
| <b>Basic Filing:</b>                        |                          |                 |               |                             |
| PROVISIONAL APPLICATION FILING              | 1005                     | 1               | 280           | 280                         |
| <b>Pages:</b>                               |                          |                 |               |                             |
| <b>Claims:</b>                              |                          |                 |               |                             |
| <b>Miscellaneous-Filing:</b>                |                          |                 |               |                             |
| <b>Petition:</b>                            |                          |                 |               |                             |
| <b>Patent-Appeals-and-Interference:</b>     |                          |                 |               |                             |
| <b>Post-Allowance-and-Post-Issuance:</b>    |                          |                 |               |                             |

| Description        | Fee Code | Quantity | Amount | Sub-Total in USD(\$) |
|--------------------|----------|----------|--------|----------------------|
| Extension-of-Time: |          |          |        |                      |
| Miscellaneous:     |          |          |        |                      |
| Total in USD (\$)  |          |          |        | 280                  |

## Electronic Acknowledgement Receipt

|                                             |                          |
|---------------------------------------------|--------------------------|
| <b>EFS ID:</b>                              | 32011071                 |
| <b>Application Number:</b>                  | 62640914                 |
| <b>International Application Number:</b>    |                          |
| <b>Confirmation Number:</b>                 | 4974                     |
| <b>Title of Invention:</b>                  | PUSH-PULL BOOT CONNECTOR |
| <b>First Named Inventor/Applicant Name:</b> | Aran James Russell       |
| <b>Customer Number:</b>                     | 22827                    |
| <b>Filer:</b>                               | Thomas D. Huycke         |
| <b>Filer Authorized By:</b>                 |                          |
| <b>Attorney Docket Number:</b>              | AFLIG-120-P2             |
| <b>Receipt Date:</b>                        | 09-MAR-2018              |
| <b>Filing Date:</b>                         |                          |
| <b>Time Stamp:</b>                          | 15:33:21                 |
| <b>Application Type:</b>                    | Provisional              |

### Payment information:

|                                          |                       |
|------------------------------------------|-----------------------|
| Submitted with Payment                   | yes                   |
| Payment Type                             | CARD                  |
| Payment was successfully received in RAM | \$280                 |
| RAM confirmation Number                  | 031218INTEFSW15341900 |
| Deposit Account                          |                       |
| Authorized User                          |                       |

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

|                                                 |                                                   |                  |                                          |                  |                  |
|-------------------------------------------------|---------------------------------------------------|------------------|------------------------------------------|------------------|------------------|
|                                                 |                                                   |                  |                                          |                  |                  |
| File Listing:                                   |                                                   |                  |                                          |                  |                  |
| Document Number                                 | Document Description                              | File Name        | File Size(Bytes)/<br>Message Digest      | Multi Part /.zip | Pages (if appl.) |
| 1                                               | Specification                                     | 1Spec.pdf        | 73224                                    | no               | 2                |
|                                                 |                                                   |                  | 0837a9d24a2c9dbfa44c55e215e5c8e0c992cf98 |                  |                  |
| Warnings:                                       |                                                   |                  |                                          |                  |                  |
| Information:                                    |                                                   |                  |                                          |                  |                  |
| 2                                               | Claims                                            | 2Claims.pdf      | 48122                                    | no               | 1                |
|                                                 |                                                   |                  | 37d9f17bbf0f39e68e194808763aaff3c62a11ab |                  |                  |
| Warnings:                                       |                                                   |                  |                                          |                  |                  |
| Information:                                    |                                                   |                  |                                          |                  |                  |
| 3                                               | Drawings-other than black and white line drawings | 3Drawings.pdf    | 931979                                   | no               | 13               |
|                                                 |                                                   |                  | 305a42cb2bbf8d845745cc12a1622e13bd88e18e |                  |                  |
| Warnings:                                       |                                                   |                  |                                          |                  |                  |
| Information:                                    |                                                   |                  |                                          |                  |                  |
| 4                                               | Power of Attorney                                 | 4POA.pdf         | 534976                                   | no               | 3                |
|                                                 |                                                   |                  | 6be4843b6a0e96e452ec9718cf3cc8870724220e |                  |                  |
| Warnings:                                       |                                                   |                  |                                          |                  |                  |
| Information:                                    |                                                   |                  |                                          |                  |                  |
| 5                                               | Application Data Sheet                            | 5ADS.pdf         | 137906                                   | no               | 8                |
|                                                 |                                                   |                  | bee37037227bab00282c3c72027325d1f9bb3a28 |                  |                  |
| Warnings:                                       |                                                   |                  |                                          |                  |                  |
| Information:                                    |                                                   |                  |                                          |                  |                  |
| This is not an USPTO supplied ADS fillable form |                                                   |                  |                                          |                  |                  |
| 6                                               | Miscellaneous Incoming Letter                     | 6Certificate.pdf | 67697                                    | no               | 1                |
|                                                 |                                                   |                  | 074f011c9cbae51d21e2ccff4c5f58f9578b2a8a |                  |                  |
| Warnings:                                       |                                                   |                  |                                          |                  |                  |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                |                  |                                          |    |   |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|------------------|------------------------------------------|----|---|
| <b>Information:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                |                  |                                          |    |   |
| 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Miscellaneous Incoming Letter  | 7Deposit.pdf     | 81108                                    | no | 1 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                |                  | cc8c8687eeb7e3e5a85b8c6a36ccff8f561197df |    |   |
| <b>Warnings:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                |                  |                                          |    |   |
| <b>Information:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                |                  |                                          |    |   |
| 8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Provisional Cover Sheet (SB16) | 8Transmittal.pdf | 95608                                    | no | 3 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                |                  | e708bc6696073aff5f5f0c032873149d26bd2444 |    |   |
| <b>Warnings:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                |                  |                                          |    |   |
| This is not a USPTO supplied Provisional Cover Sheet SB16 form.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                |                  |                                          |    |   |
| <b>Information:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                |                  |                                          |    |   |
| 9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Fee Worksheet (SB06)           | fee-info.pdf     | 29668                                    | no | 2 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                |                  | 67dced15516424d09d571a7905e1ebf1489190d7 |    |   |
| <b>Warnings:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                |                  |                                          |    |   |
| <b>Information:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                |                  |                                          |    |   |
| <b>Total Files Size (in bytes):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                |                  | 2000288                                  |    |   |
| <p><b>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.</b></p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b><br/> 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><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b><br/> 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><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b><br/> 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> |                                |                  |                                          |    |   |

## PUSH-PULL BOOT CONNECTOR

### BACKGROUND OF THE INVENTION

[0001] The space within datacenters is at a premium, and the density (amount of connections in a defined space) is a key factor in deciding which product is specified. Current panel designs use LC connections, this is limited to a count of 144 fibres per 1U (standard height of 1U 19" wide panel within a rack) due to the physical size of the connector & the space envelope available. Access to install or remove this type of connector is difficult at high densities.

[0002] The LC connector utilizes a single sided latching mechanism which is deemed by the industry to be unstable when compared to dual latch type connectors (e.g SC or MU connectors).

[0003] Some LC connector designs include an extended pulling latch to facilitate removal.

[0004] There have been attempts to manage the volume of cabling density through the use of 'uniboot' connectors which allow two fibre termination devices to be held into a single housing with only one cable exiting. Although these reduce the volume of cabling, the latch mechanisms remain the same and therefore accessibility is still an issue.

[0005] Improved latching features for various connector types, including LC, SC, and SC, are thus desired.

### DESCRIPTION OF THE INVENTION

[0006] Reference now will be made in detail to embodiments of the invention, one or more examples of which are illustrated in the drawings. Each example is provided by way of explanation of the invention, not limitation of the invention. In fact, it will be apparent to those skilled in the art that various modifications and variations can be made in the present invention without departing from the scope or spirit of the invention. For instance, features illustrated or described as part of one embodiment can be used with another embodiment to yield a still further

embodiment. Thus, it is intended that the present invention covers such modifications and variations as come within the scope of the appended claims and their equivalents.

[0007] Utilization of an industry standard recognized connector design that has a dual latching feature that does not protrude beyond the body of the connector therefore minimizing the space required for the connection to occur. This in turn allows a greater density to be mounted within a standard 1RU footprint.

[0008] Combination of connector variant with uniboot design to minimize cable volume. MU duplex uniboot connector with remote release 'push-pull' strain relief boot.

[0009] The connector housing when pulled away from the mating face of the connector, via the strain relief boot, will detach the latching mechanism.

[0010] The connector strain relief boot clips into the connector housing, allowing both the connector housing & boot to act as a single moving floating assembly.

[0011] Density of a 1U panel can be increased to 256 fibres.

[0012] Access to install or remove connection is increased (pushing or pulling of connector boot instead of needing access to the connector housing).

[0013] No remote pulling latch to hinder cable routing or finger access.

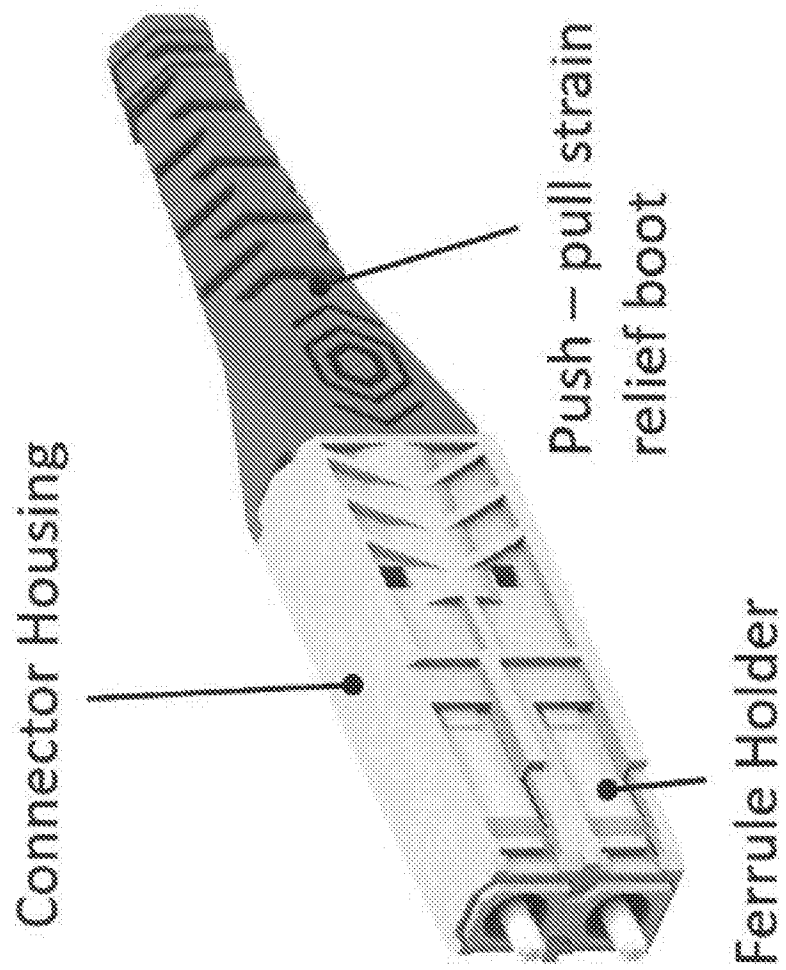
[0014] Dual latched MU connector provides increase connector stability when compared to an LC connection.

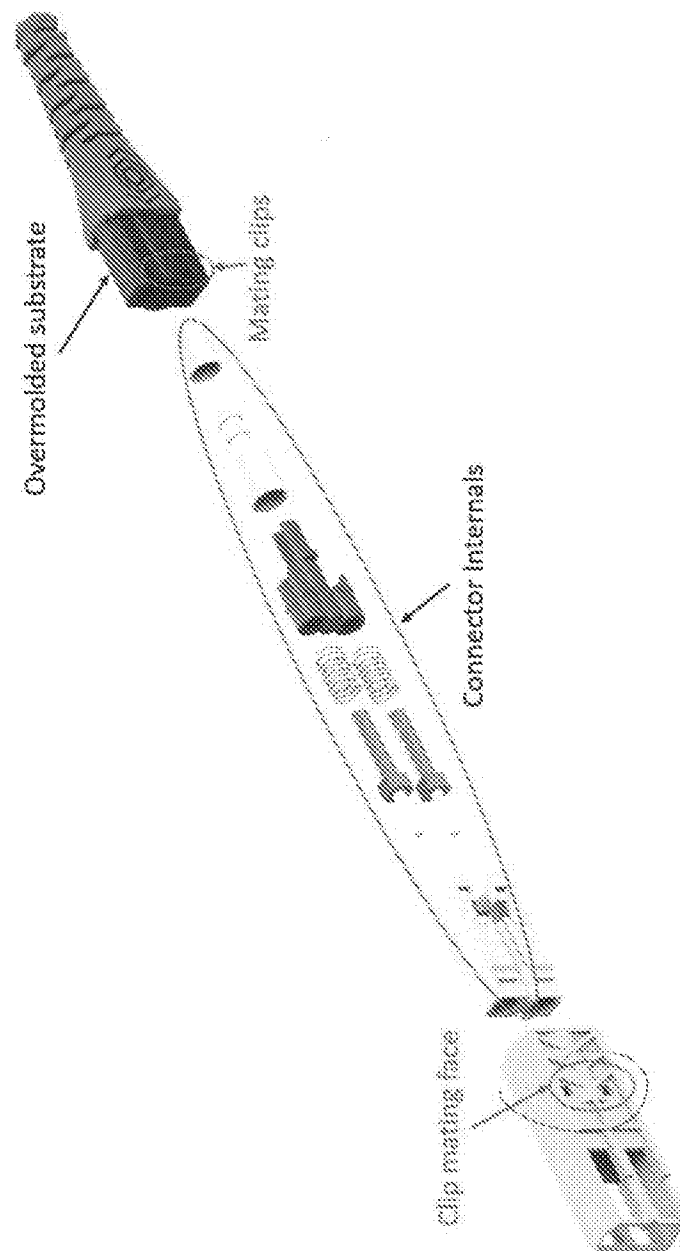
[0015] The accompanying figures and description illustrate embodiments of push-pull boot connectors in accordance with the present disclosure.

[0016] This written description uses examples to disclose the invention, including the best mode, and also to enable any person skilled in the art to practice the invention, including making and using any devices or systems and performing any incorporated methods. The patentable scope of the invention is defined by the claims, and may include other examples that occur to those skilled in the art. Such other examples are intended to be within the scope of the claims if they include structural elements that do not differ from the literal language of the claims, or if they include equivalent structural elements with insubstantial differences from the literal languages of the claims.

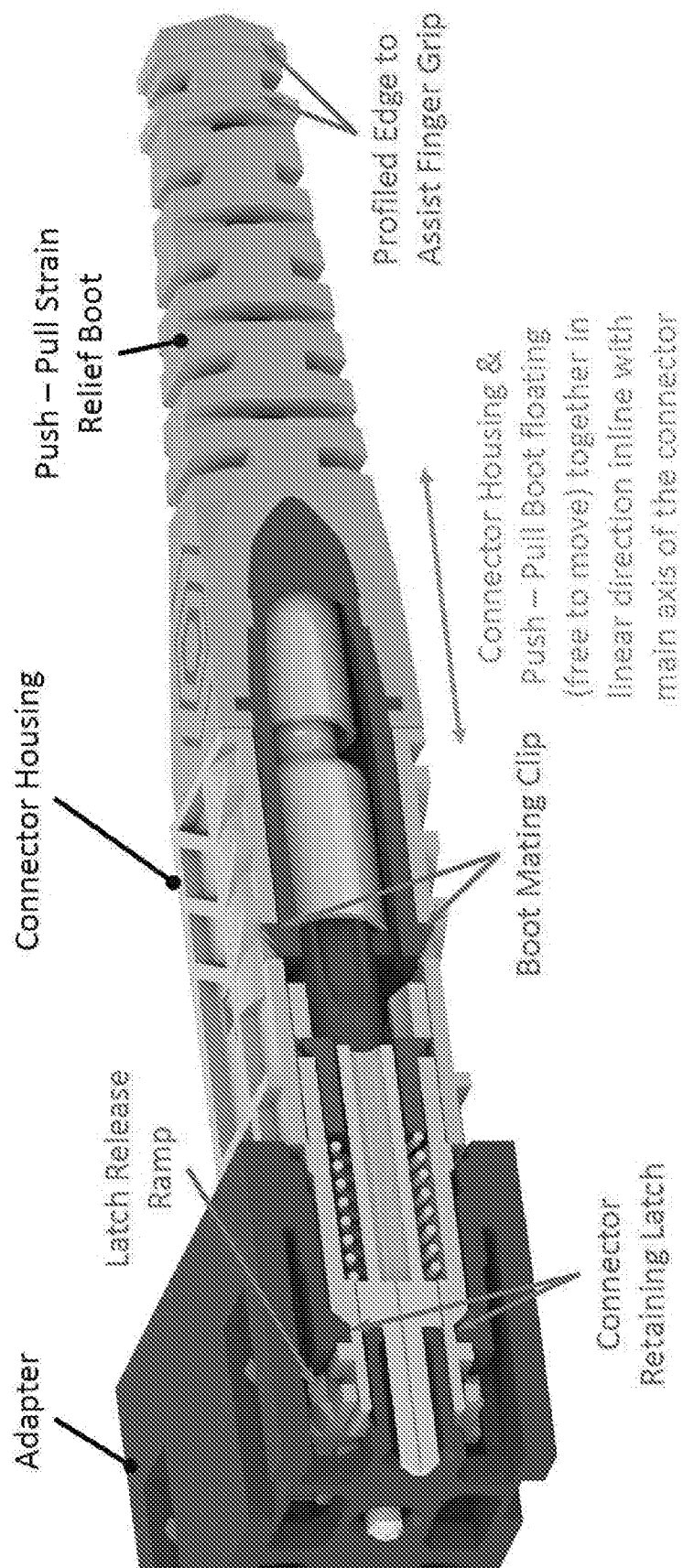
WHAT IS CLAIMED IS:

1. A push-pull boot connector as shown and described herein.
2. An LC push-pull boot connector as shown and described herein.
3. A SC push-pull boot connector as shown and described herein.
4. A SC simplex push-pull boot connector as shown and described herein.
5. A SC duplex push-pull boot connector as shown and described herein.
6. A CS push-pull boot connector as shown and described herein.

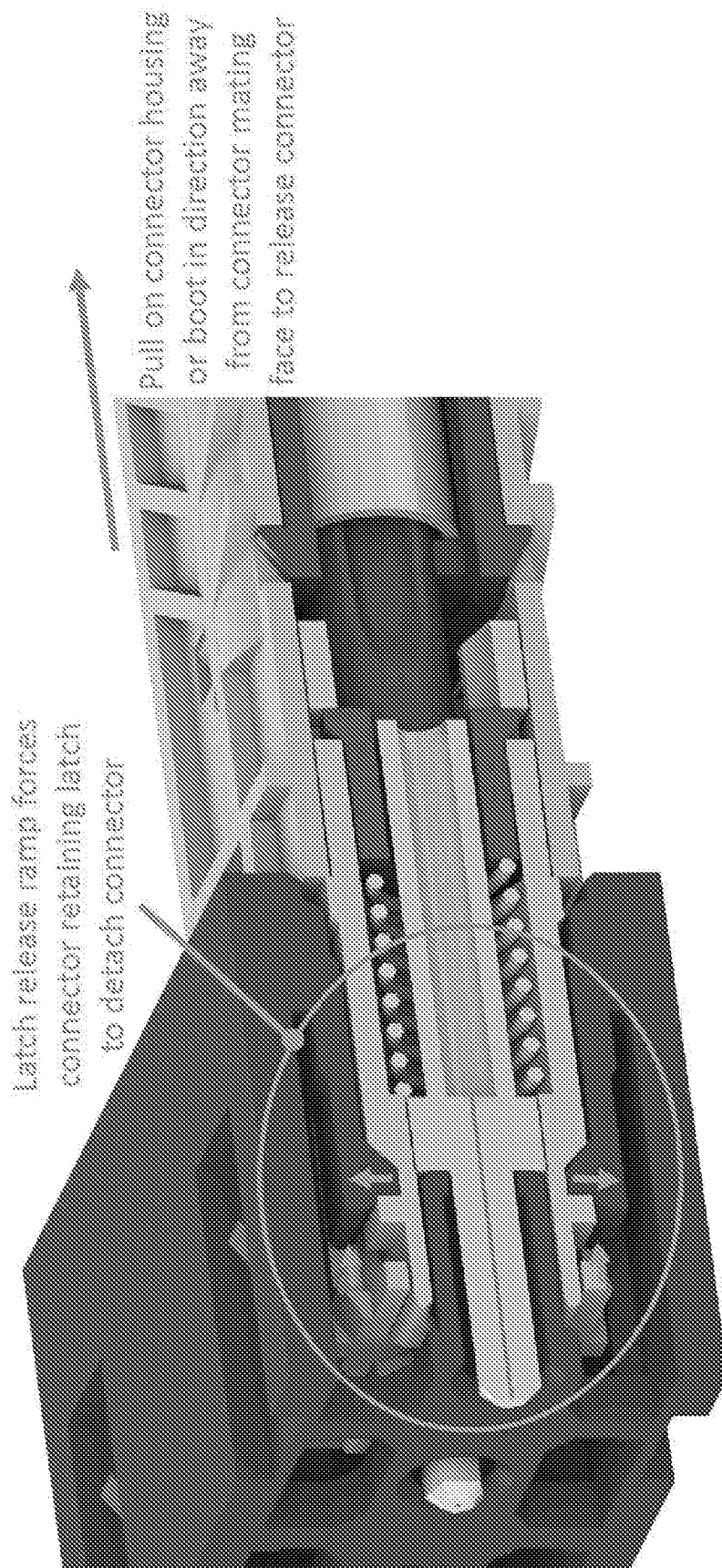


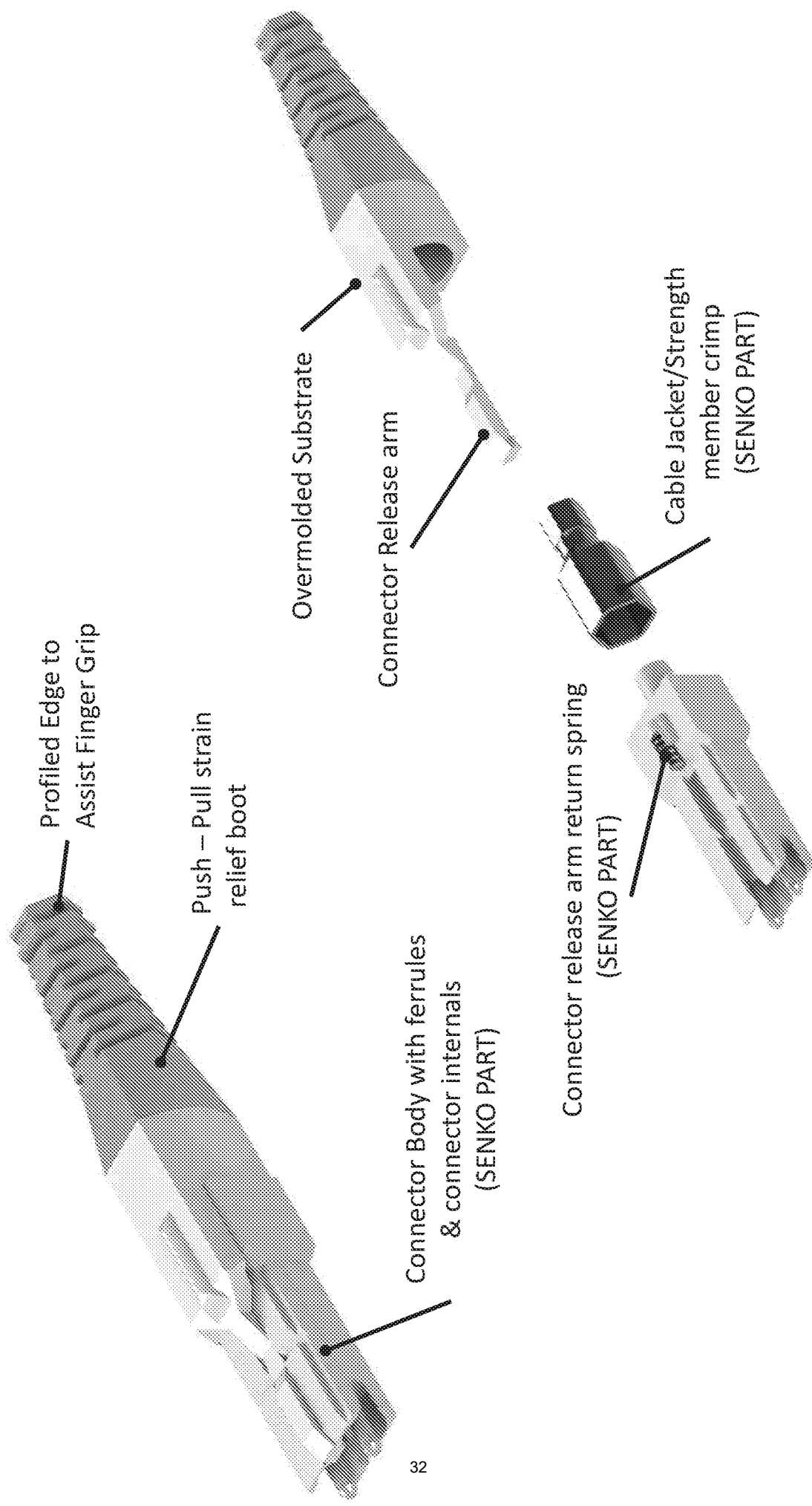


# Cross Section View

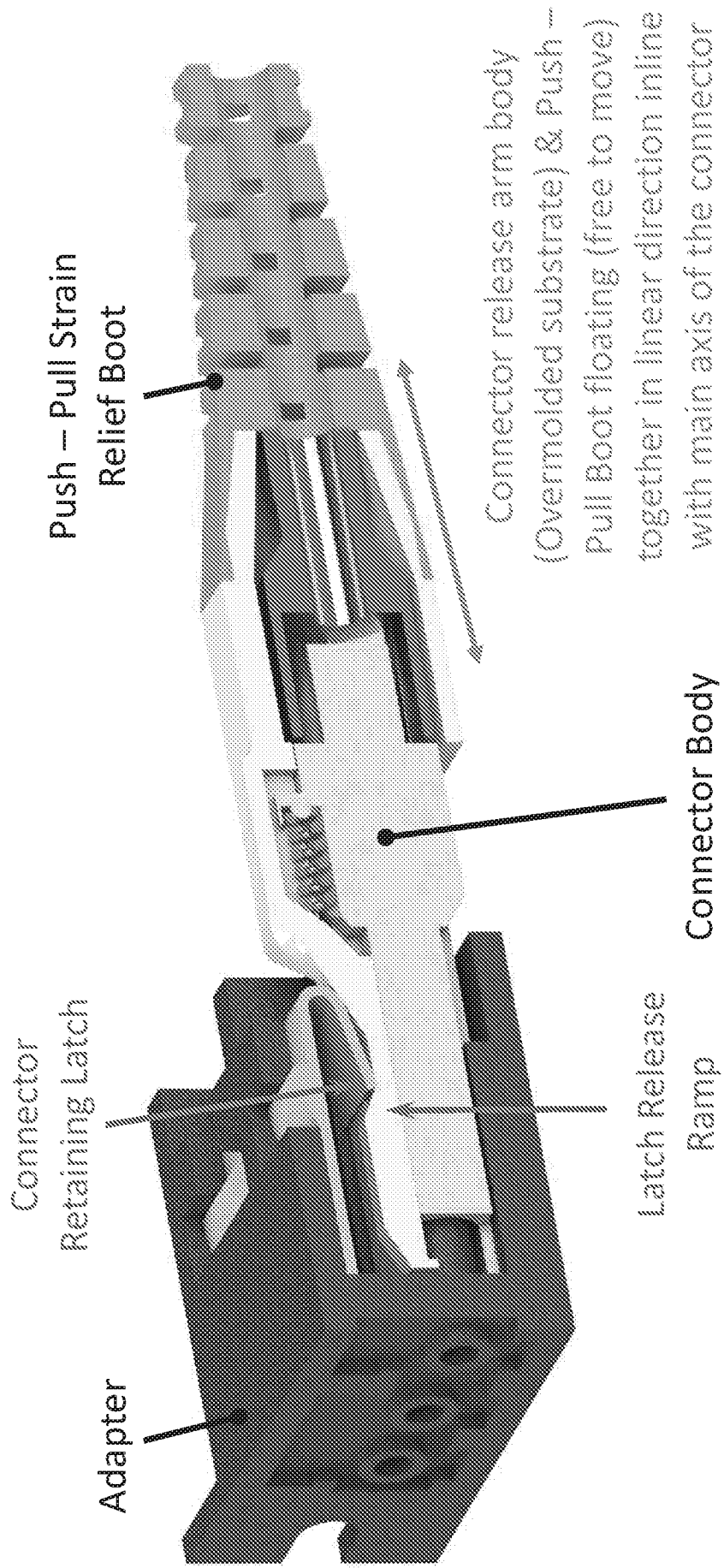


## Cross Section View – Latch Release



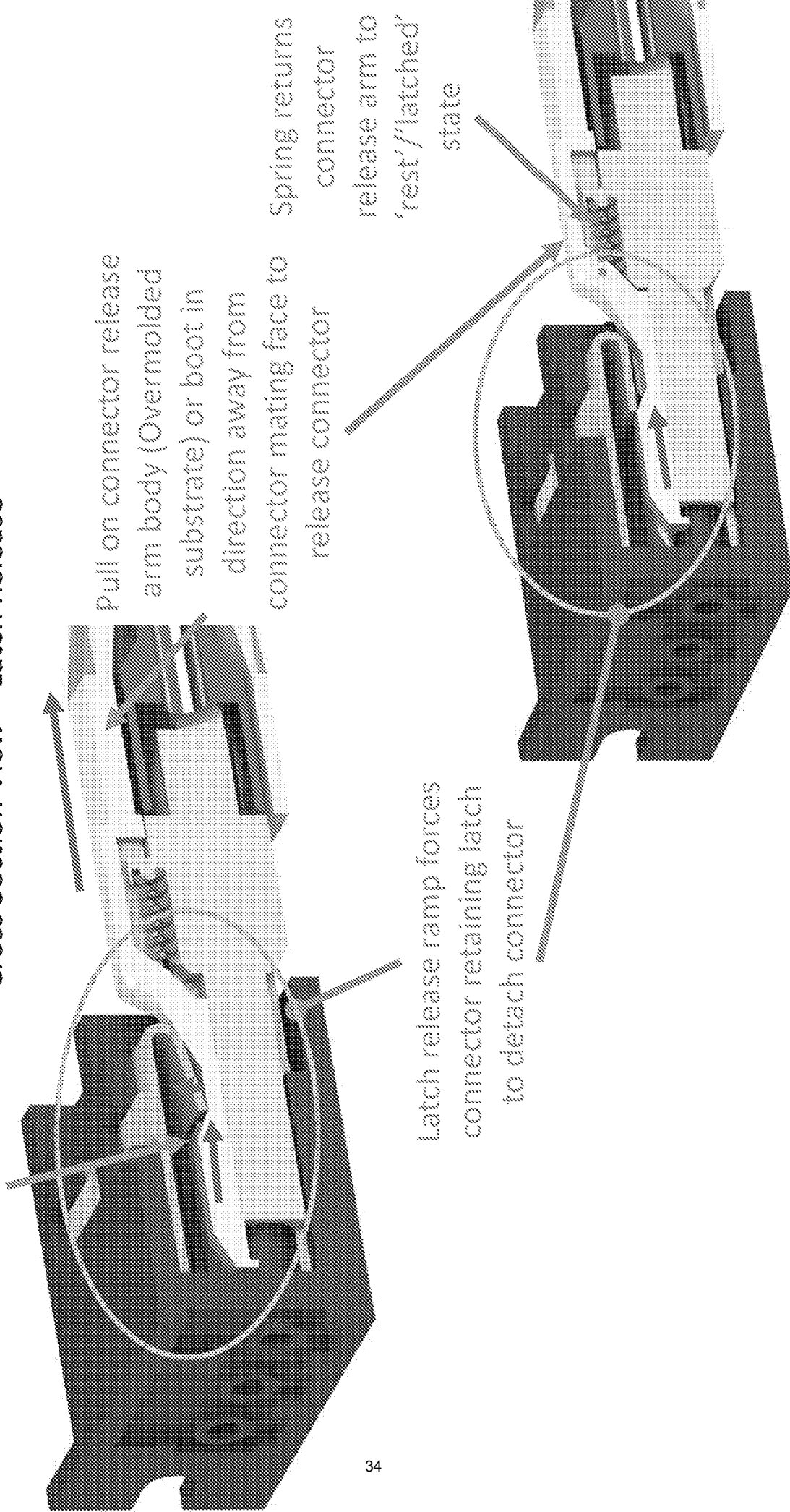


## Cross Section View

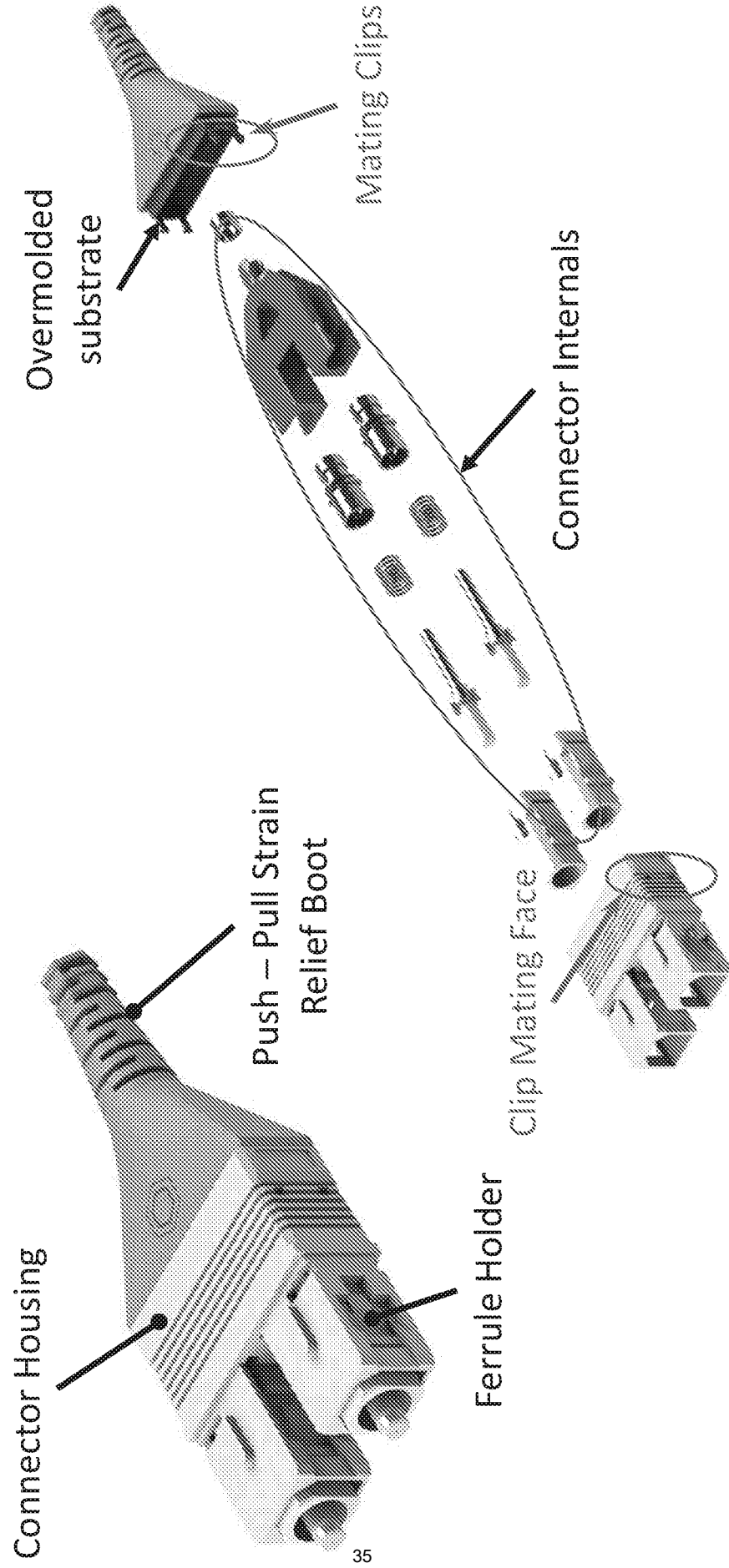


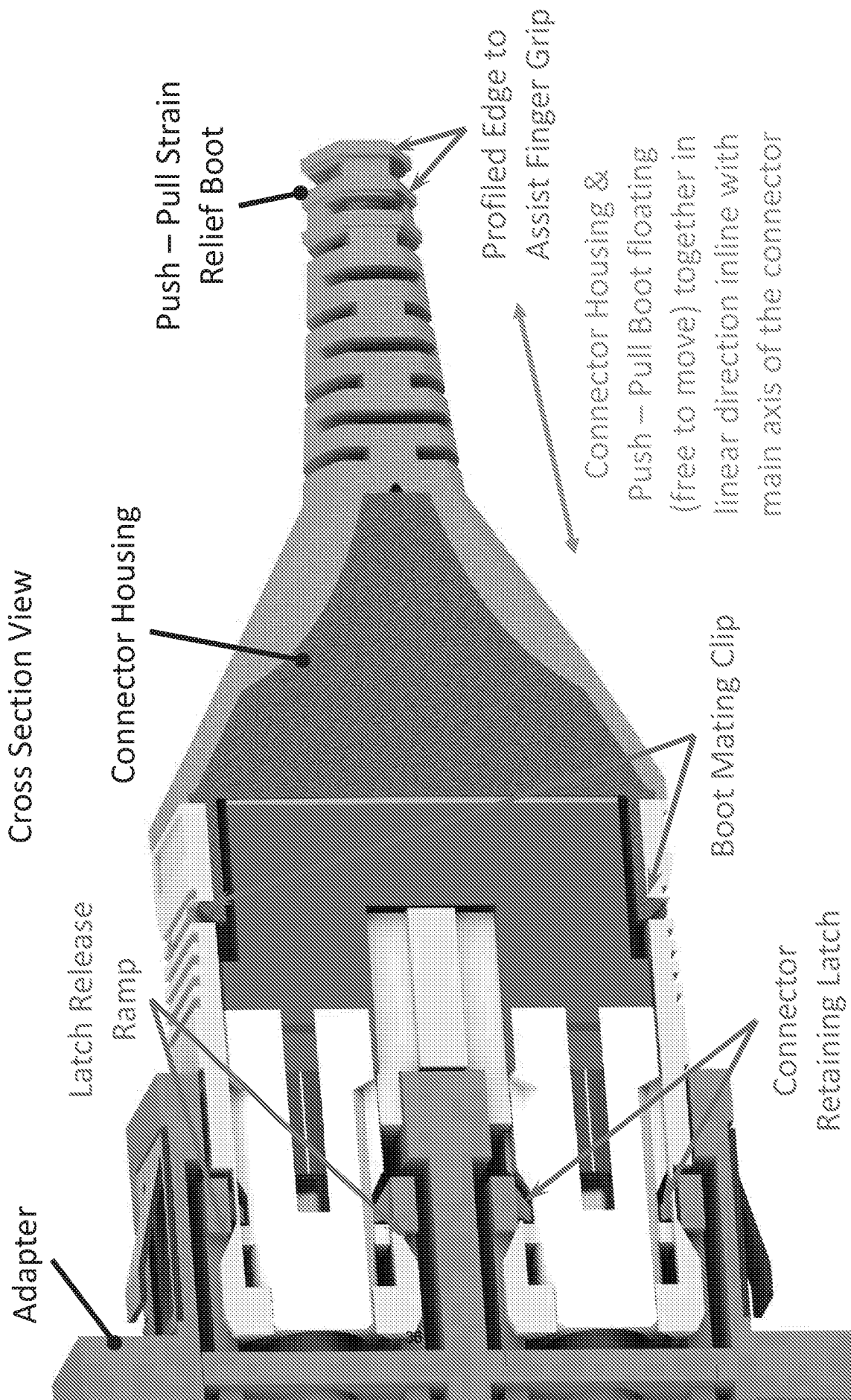
Latch Retaining face

## Cross Section View – Latch Release

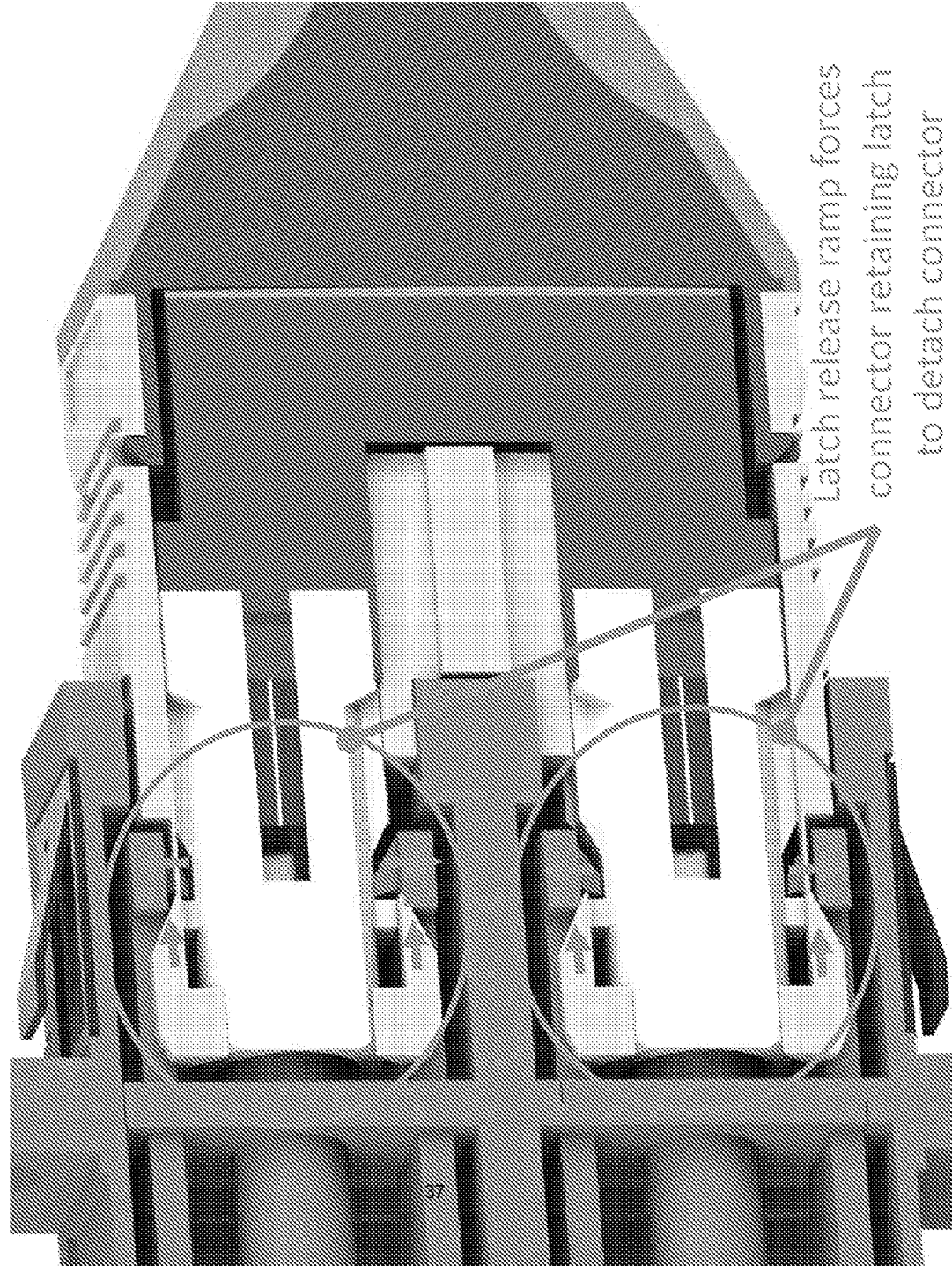


## SC Duplex Push-Pull Uniboot



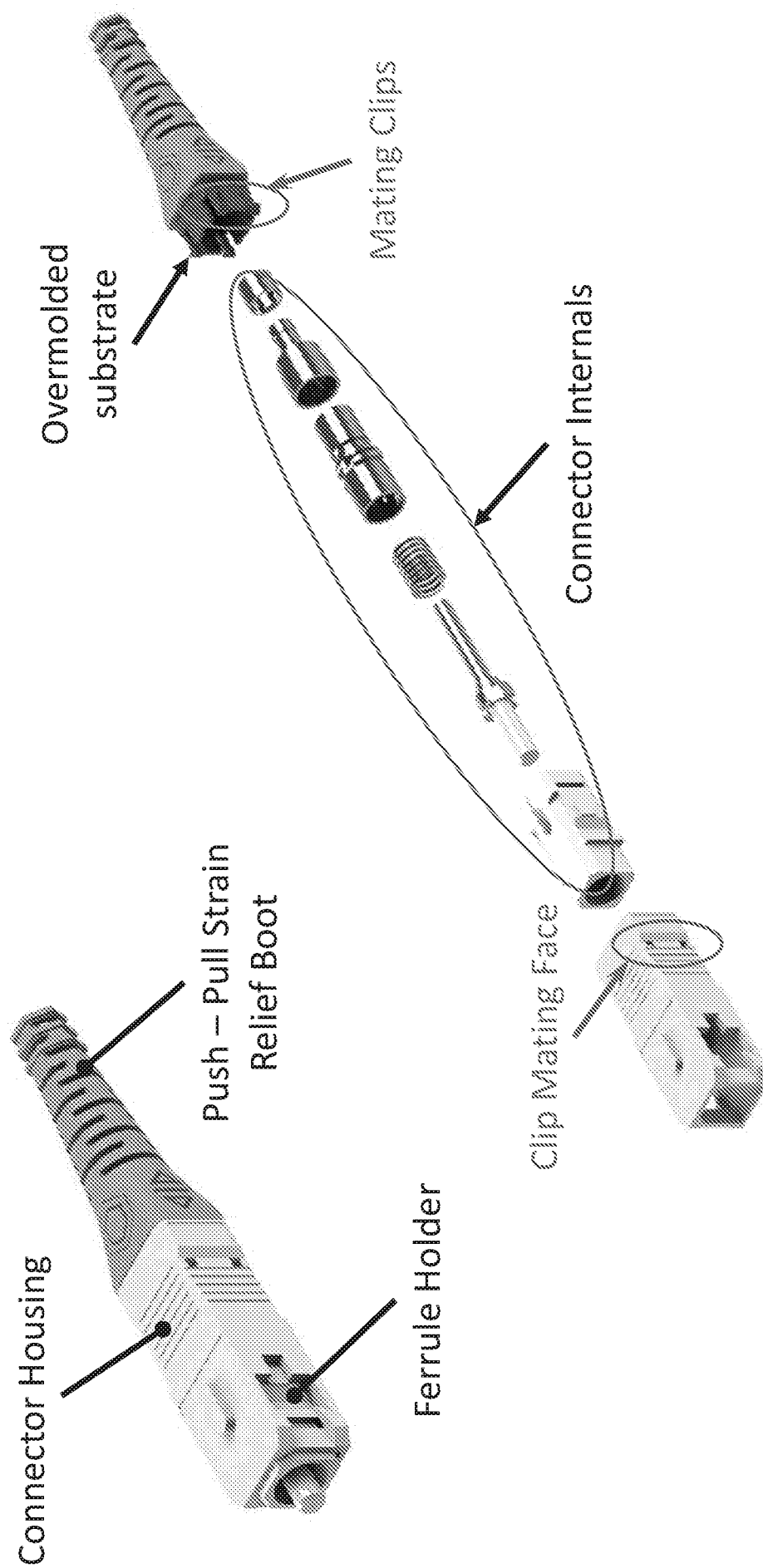


## Cross Section View – Latch Release



Pull on connector housing  
or boot in direction away  
from connector mating  
face to release connector

## SC Simplex Push-Pull



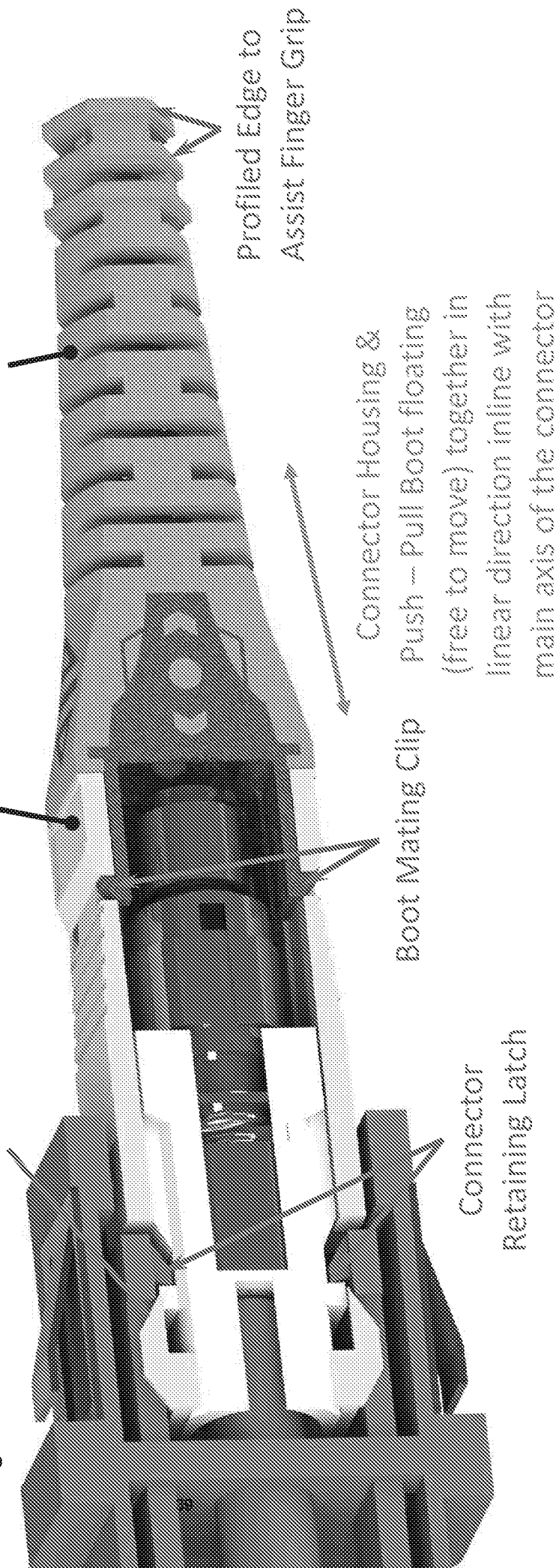
## Cross Section View

Adapter

Latch Release  
Ramp

Connector Housing

Push – Pull Strain  
Relief Boot



Profiled Edge to  
Assist Finger Grip

Connector Housing &

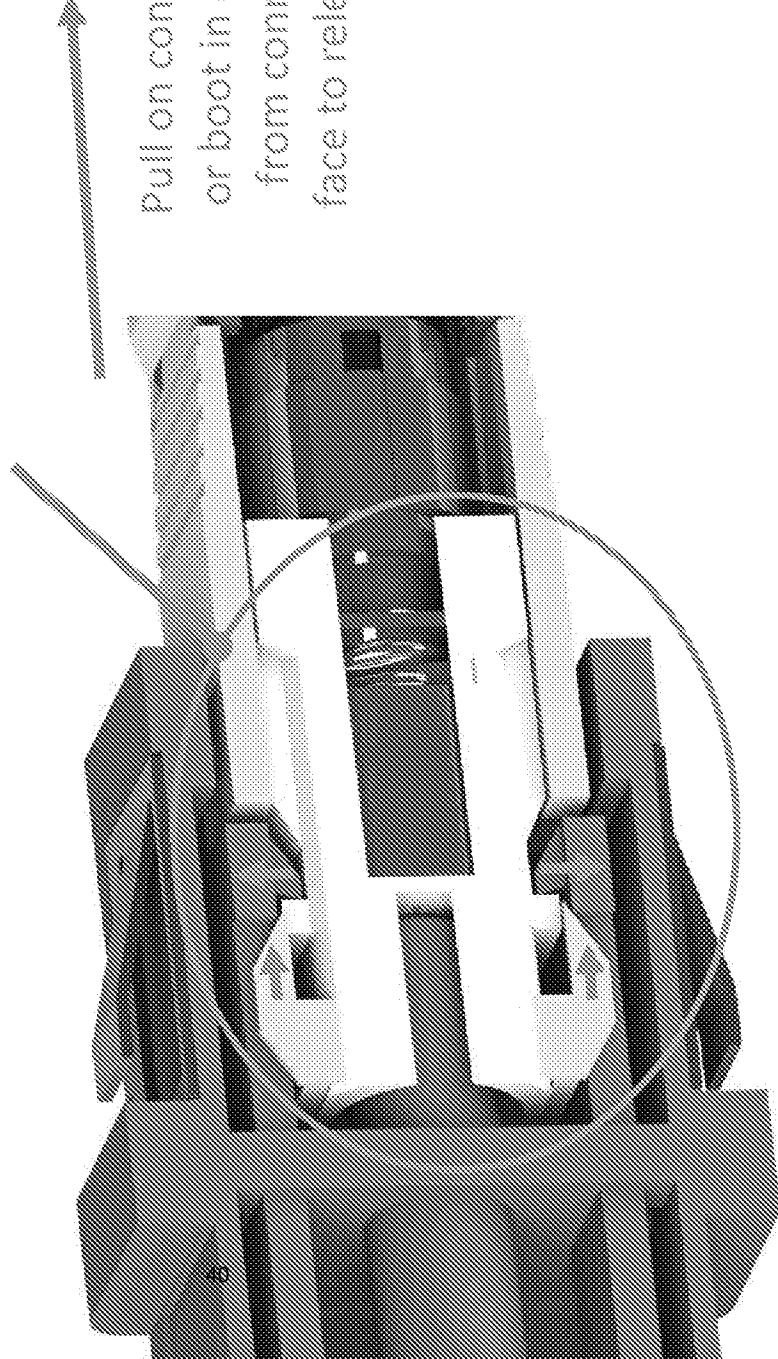
Push – Pull Boot floating  
(free to move) together in  
linear direction inline with  
main axis of the connector

Boot Mating Clip

Connector  
Retaining Latch

## Cross Section View – Latch Release

Latch release ramp forces  
connector retaining latch  
to detach connector



Pull on connector housing  
or boot in direction away  
from connector mating  
face to release connector

## **SCORE Placeholder Sheet for IFW Content**

Application Number: 62640914

Document Date: 03/09/2018

The presence of this form in the IFW record indicates that the following document type was received in electronic format on the date identified above. This content is stored in the SCORE database.

Since this was an electronic submission, there is no physical artifact folder, no artifact folder is recorded in PALM, and no paper documents or physical media exist. The TIFF images in the IFW record were created from the original documents that are stored in SCORE.

- Drawing

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