

CAVELIER

ABOGADOS

www.cavelier.com
cavelier@cavelier.com

EDIFICIO SISKI
CARRERA 4 No. 72 - 35
BOGOTÁ 8, COLOMBIA

54
Teléfono: (57-1) 347 3811
Telefax: (57-1) 211 8850
(57-1) 540 0880
Fax In U.S.A.: (1-305) 381 9680

Señora Jefe de la
DIVISION DE NUEVAS CREACIONES
Superintendencia de Industria y Comercio
E. S. D.

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO
Rad: 06-083416-00003-0000
Fec: 2008-12-18 17:38:17 Dep. 2020 NUECREACIONE.
Tra. 2 PATENTES
Eve: 1 REGDEPOSITO
Act 444 RESPUESTAREQUE Folios: 101

Trámite : 011
Evento : 379
Actuación: 444

Referencia : Expediente No. 06083416
Asunto : Solicitud de patente para CONECTOR DE CABLE
COAXIAL CON MANGO DE AJUSTE DE FRICCION

Solicitante : THOMAS & BETTS INTERNATIONAL, INC.
Fecha solicitud : 23 de agosto de 2006

1. Yo, Emilio FERRERO, obrando como apoderado del solicitante en el asunto antes identificado, me refiero al Oficio N° 11886, notificado por fijación en lista de 19 de octubre de 2006.

2. Mediante el Oficio N° 11886 se puso en conocimiento del solicitante el informe que contiene las observaciones hechas por ese Despacho sobre la presente solicitud de patente. Atiendo a las observaciones de la manera siguiente:

2.1. Cesión: Presento junto con este escrito el documento en que consta la cesión del derecho a la patente de los inventores Julio F. RODRIGUES, Allen L. MALLOY y Charles E. THOMAS a favor de la sociedad THOMAS & BETTS INTERNATIONAL, INC., debidamente notariado y legalizado por Apostilla, junto con su respectiva traducción oficial al español.

2.2 Documentos de Prioridad: Documentos de prioridad de las solicitudes de patente de invención No. 60/710.724 y No. 60/764.450, debidamente notarizadas y legalizadas por Apostilla, junto con sus respectivas traducciones oficiales a español del certificado de la Oficina de Patente de Estados Unidos y del capítulo reivindicatorio.

3. Puesto que se han atendido a cabalidad las observaciones hechas por ese Despacho sobre la presente solicitud de patente de invención, atentamente solicito que se continúe su tramitación y se ordene la publicación en la Gaceta de la Propiedad Industrial.

Bogotá,

Señora Jefe,



EMILIO FERRERO

T.P.A. No. 31.929

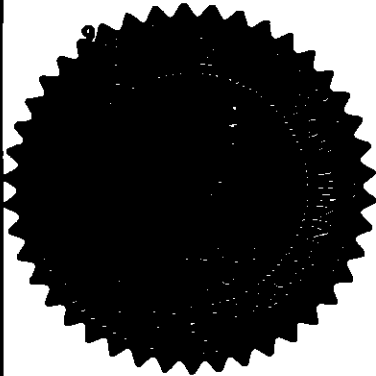
APOSTILLE

(Convention de La Haye du 5 octobre 1961)

- 1. Country: United States of America
- 2. This public document has been signed by DEBBIE STAMSON
- 3. acting in the capacity of COUNTY CLERK OF SHELBY COUNTY, TENNESSEE
- 4. bears the seal/stamp of COUNTY SEAL OF SHELBY COUNTY, TENNESSEE

Certified

- 5. at Nashville, Tennessee
- 6. the Thursday, December 07, 2006
- 7. by RILEY C. DARNELL, SECRETARY OF STATE, STATE OF TENNESSEE
- 8. No. 06-13337



10. Signature

Riley C. Darnell

STATE OF TENNESSEE
SHELBY COUNTY
CLERK'S OFFICE

} ss.

57

DEBBIE STAMSON, *Clerk of said County do hereby certify that*

JILL KELLIS

before whom the annexed instrument was taken, and whose name is subscribed in the certificate of proof thereof, was, at the time of taking the same, a Notary Public in and for said county, duly sworn and acting as such, and authorized to take the same, and was also authorized to take acknowledgments to deeds or conveyances of land within the state aforesaid; and further, that I am well acquainted with his handwriting, and verily believe the signature thereto to be his genuine signature; and further, that the annexed instrument is executed and acknowledged according to the laws of the State of Tennessee.

In testimony whereof, I have hereunto set my hand and affixed the seal of said County, at Memphis, Tennessee, this

4TH

day of

DECEMBER 20 06

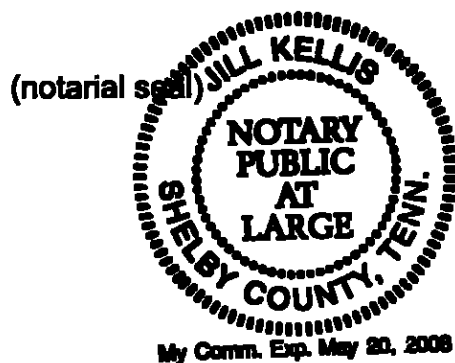
Debbie Stamson Clerk

NOTARIAL CERTIFICATE

STATE OF TENNESSEE)
)
COUNTY OF SHELBY) **SS:**

I, Jill Kellis, do hereby certify that the attached is a true copy of the original Assignment recorded with the United States Patent & Trademark Office.

Witness my hand and Notarial Seal, this 27st day of November 2006.





Jill Kellis - Notary Public



59
JUN 5 2006

UNITED STATES PATENT AND TRADEMARK OFFICE

UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND
DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE

MAY 23, 2006

PTAS

GLENN T. HENNEBERGER, ESQ.
HOFFMANN & BARON, LLP
6900 JERICHO TURNPIKE
SYOSSET, NY 11791



103195806A

**UNITED STATES PATENT AND TRADEMARK OFFICE
NOTICE OF RECORDATION OF ASSIGNMENT DOCUMENT**

THE ENCLOSED DOCUMENT HAS BEEN RECORDED BY THE ASSIGNMENT DIVISION OF THE U.S. PATENT AND TRADEMARK OFFICE. A COMPLETE MICROFILM COPY IS AVAILABLE AT THE ASSIGNMENT SEARCH ROOM ON THE REEL AND FRAME NUMBER REFERENCED BELOW.

PLEASE REVIEW ALL INFORMATION CONTAINED ON THIS NOTICE. THE INFORMATION CONTAINED ON THIS RECORDATION NOTICE REFLECTS THE DATA PRESENT IN THE PATENT AND TRADEMARK ASSIGNMENT SYSTEM. IF YOU SHOULD FIND ANY ERRORS OR HAVE QUESTIONS CONCERNING THIS NOTICE, YOU MAY CONTACT THE EMPLOYEE WHOSE NAME APPEARS ON THIS NOTICE AT 571-272-3350. PLEASE SEND REQUEST FOR CORRECTION TO: U.S. PATENT AND TRADEMARK OFFICE, MAIL STOP: ASSIGNMENT SERVICES BRANCH, P.O. BOX 1450, ALEXANDRIA, VA 22313.

RECORDATION DATE: 03/08/2006

REEL/FRAME: 017654/0211
NUMBER OF PAGES: 4

BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).
DOCKET NUMBER: 577-778P

ASSIGNOR:
RODRIGUES, JULIO F.

DOC DATE: 02/24/2006

ASSIGNOR:
MALLOY, ALLEN L.

DOC DATE: 02/16/2006

ASSIGNOR:
THOMAS, CHARLES E.

DOC DATE: 02/16/2006

ASSIGNEE:
THOMAS & BETTS INTERNATIONAL, INC.
501 SILVERSIDE ROAD, SUITE 67
WILMINGTON, DELAWARE 19809

SERIAL NUMBER: 60764450

FILING DATE: 02/02/2006

PATENT NUMBER:

ISSUE DATE:

TITLE: COAXIAL CABLE CONNECTOR WITH IMPROVED FRICTION-FIT SLEEVE

60

017654/0211 PAGE 2

ANTIONE ROYALL, EXAMINER
ASSIGNMENT SERVICES BRANCH
PUBLIC RECORDS DIVISION

61

Attorney's Docket No.: 577-778P

PATENT

For: ☒ U.S. and/or ☒ Foreign Rights
For: ☒ U.S. Application;
☒ U.S. Provisional Application;
☐ U.S. Patent; or
☐ PCT Application
By: ☒ Inventors or ☐ Present Owners

ASSIGNMENT OF INVENTION

In consideration of the payment by ASSIGNEE to ASSIGNOR of the sum of One Dollar (\$1.00), the receipt of which is hereby acknowledged, and for other good and valuable consideration,

ASSIGNORS: (inventor(s) or person(s) or entity(ies) who own the invention)

<u>Julio F. Rodrigues</u> Name	<u>Allen L. Malloy</u> Name	<u>Charles E. Thomas</u> Name
<u>164 W. Nolley Drive</u> Address	<u>31 North Timber Lane</u> Address	<u>397 Pump Station Hill Road</u> Address
<u>Collierville, TN 38017</u>	<u>Elmira, NY 14904</u>	<u>Athens, PA 18810</u>
<u>USA</u> Nationality	<u>USA</u> Nationality	<u>USA</u> Nationality

(If assignment is by person or entity to whom invention was previously assigned and this was recorded in PTO add the following)

Recorded on _____ Reel _____
Frame _____

hereby sells, assigns and transfers to

ASSIGNEE:

Thomas & Berts International, Inc.
(Type or print name of ASSIGNEE)

501 Silverside Road, Suite 67
Address

Wilmington, Delaware 19809

USA
Nationality

62
and the successors, assigns and legal representatives of the ASSIGNEE,

(complete one of the following)

- ☒ the entire right, title and interest
☐ an undivided _____ percent (____%) interest

for the United States and its territorial possessions

- ☒ and in all foreign countries, including all rights to claim priority,

in and to any and all improvements which are disclosed in the invention entitled:

COAXIAL CABLE CONNECTOR WITH IMPROVED FRICTION-FIT SLEEVE

and which is found in

(check and complete (a), (b), (c), (d), (e), (f), or (g))

- (a) ☐ U.S. patent application executed on even date herewith
(b) ☐ U.S. patent application executed on _____
(c) ☒ U.S. provisional application naming the above inventor(s) for the above-identified invention.
 ☒ Express Mail label No.: EL867444609US, mailed: February 2, 2006
 ☐ To comply with 37 CFR 3.21 for recordal of this assignment, I, an ASSIGNOR signing below, hereby authorize and request my attorney to insert below the filing date and application number when they become known
(d) ☐ U.S. application Serial No. _____ filed on _____
(e) ☐ International application No. PCT/_____/_____
(f) ☐ U.S. Patent No. _____ issued _____
 ☐ A change of address to which correspondence is to be sent regarding patent maintenance fees is being sent separately.
(g) ☐ and any legal equivalent thereof in a foreign country, including the right to claim priority

and, in and to, all Letters Patent to be obtained for said invention by the above application or any continuation, division, renewal, or substitute thereof, and as to Letters Patent any re-issue or re-examination thereof.

ASSIGNOR hereby covenants that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with this assignment.

ASSIGNOR further covenants that ASSIGNEE will, upon its request, be provided promptly with all pertinent facts and documents relating to said invention and said Letters Patent and legal equivalents as may be known and accessible to ASSIGNOR and will testify as to the same in any interference, litigation or proceeding related thereto and will promptly execute and deliver to ASSIGNEE or its legal representatives any and all papers, instruments or affidavits required to apply for, obtain, maintain, issue and enforce said application, said invention and said Letters Patent and said equivalents thereof which may be necessary or desirable to carry out the purposes thereof.

IN WITNESS WHEREOF, I/We have hereunto set hand and seal this

above. WARNING: Date of signing must be the same as the date of execution of the application if item (a) was checked

Date: X 2/24/06
Date of signing

X Julio F. Rodriguez
Julio F. Rodriguez

Date: X 2/16/06
Date of signing

X Allen L. Malloy
Allen L. Malloy

Date: X 2/16/06
Date of signing

X Charles E. Thomas
Charles E. Thomas

NOTE: No witnessing, notarization or legalization is necessary. If the assignment is notarized or legalized then it will only be prima facie evidence of execution 35 USC 261 Use next page if notarization is desired.

☐ Notarization or Legalization Page Added.

TRADUCCIÓN OFICIAL No. 12.18/06c realizada por Diego Vargas, Traductor
Oficial, Resolución No. 0001 de 1999 del Ministerio de Justicia y
registrado ante el Ministerio de Relaciones Exteriores de Colombia.

ESCUDO DE ARMAS DE LA OFICINA DE PATENTES

OFICINA DE MARCAS Y PATENTES DE LOS ESTADOS UNIDOS

SUBSECRETARIO DE COMERCIO PARA LA PROPIEDAD INTELECTUAL Y
DIRECTOR DE LA OFICINA DE MARCAS Y PATENTES DE LOS ESTADOS UNIDOS

23 DE MAYO DE 2006

CÓDIGO DE BARRAS

PTAS

103195806A

HOFFMAN & BARON LLP
DR. GLENN T. HENNEBERGER
6900 JERICHO TURNPIKE
SYOSSET, NY 11791

OFICINA DE MARCAS Y PATENTES DE LOS ESTADOS UNIDOS
NOTIFICACIÓN DE REGISTRO DE DOCUMENTO DE CESIÓN

EL DOCUMENTO ADJUNTO HA SIDO REGISTRADO POR LA DIVISIÓN DE CESIONES
DE LA OFICINA DE MARCAS Y PATENTES DE LOS ESTADOS UNIDOS. UNA COPIA
COMPLETA EN MICROFILME BAJO LOS NÚMEROS DE ROLLO Y CUADRO QUE SE
MENCIONAN A CONTINUACIÓN ESTÁ DISPONIBLE EN LA SALA DE BÚSQUEDAS DE
CESIONES.

POR FAVOR REVISE TODA LA INFORMACIÓN QUE CONTIENE ESTA NOTIFICACIÓN.
LA INFORMACIÓN QUE COMPRENDE ESTA NOTIFICACIÓN DE REGISTRO REFLEJA
LOS DATOS PRESENTES EN EL SISTEMA DE CESIONES DE MARCAS Y PATENTES.
SI USTED ENCUENTRA ALGÚN ERROR O TIENE PREGUNTAS EN RELACIÓN CON ESTA
NOTIFICACIÓN, PUEDE CONTACTAR AL FUNCIONARIO CUYO NOMBRE APARECE EN
ESTA NOTIFICACIÓN EN EL 571-272-3350. POR FAVOR ENVÍE SU PETICIÓN DE
CORRECCIÓN A: U.S. PATENT AND TRADEMARK OFFICE, MAIL STOP: ASSIGNMENT
SERVICES DIVISION, P.O. BOX 1450, ALEXANDRIA, VA 22313.

FECHA DE REGISTRO: 03/08/2006

ROLLO/CUADRO: 017654/0211

NÚMERO DE PÁGINAS: 4

RESUMEN: CESIÓN DEL INTERÉS DEL CEDENTE (VER DOCUMENTOS PARA INFORMACIÓN).

NÚMERO DE ASUNTO: 577-778P

CEDENTE:

RODRIGUES, JULIO F.

FECHA DEL DOC: 02/24/2006

65

CEDENTE:

MALLOY, ALLEN L.

FECHA DEL DOC: 02/16/2006

CEDENTE:

THOMAS, CHARLES E.

FECHA DEL DOC: 02/16/2006

CESIONARIO:

THOMAS & BETTS INTERNATIONAL, INC.

501 SILVERSIDE ROAD, SUITE 67

WILMINGTON, DELAWARE 19809

NÚMERO DE SERIE: 60764450

FECHA DE PRESENTACIÓN: 02/02/2006

NÚMERO DE PATENTE:

FECHA EXPEDICIÓN:

TÍTULO: CONECTOR DE CABLE COAXIAL CON MANGO DE AJUSTE DE FRICCIÓN
MEJORADO

017654/0211 PÁGINA 2

ANTIONE ROYALL, EXAMINADOR

DIVISIÓN DE CESIONES

DIVISIÓN DE REGISTROS PÚBLICOS

Asunto del Apoderado No. 577-778P

Para: ☒Derechos de EE.UU y/o☒ Extranjeros

Para: ☒Solicitud de EE.UU.

☒Solicitud provisional de EE.UU.

☐Patente de EE.UU.; o

☐Solicitud PCT

Por: ☒Inventores o ☐ Actuales Propietarios

CESIÓN DE INVENCION

En contraprestación del pago por parte del CESIONARIO al CEDENTE de la suma de Un Dólar (\$1.00), el recibo de la cual por el presente se reconoce y por otras contraprestaciones legales y válidas

CEDENTES: (inventor(es) o persona(s) o entidad(es) que son propietarios de la invención)

Julio Rodrigues
Nombre

Allen L. Malloy
Nombre

Chales E. Thomas
Nombre

164 W. Holley Drive
Dirección

31 North Timber Lane
Dirección

397 Pump Station Hill Road
Dirección

Collierville, TN 38017 Elmira, NY 14904 Athens, PA 18810

66

Estados Unidos de América Estados Unidos de América Estados Unidos de América
Nacionalidad Nacionalidad Nacionalidad

(Si la cesión es por parte de persona o entidad a quién se le había cedido anteriormente la cesión y la misma fue inscrita ante la oficina de marcas y patentes, complete lo siguiente)

Inscrita el _____ Rollo _____
Cuadro _____

por el presente vende, cede y transfiere a

CESIONARIO:

Thomas & Betts International, Inc.
(Nombre en imprenta del CESIONARIO)

501 Silverside Road, Suite 67
Dirección

Wilmington, Delaware 19809

Estados Unidos de América
Nacionalidad

y los sucesores, cesionarios y representantes legales del CESIONARIO.

(marque uno de los siguientes)

- ☒ todo el derecho, título e interés
- ☐ un _____ por ciento indiviso (_____ %) de interés

para los Estados Unidos y sus posesiones territoriales

☒ y en todos los países extranjeros, incluyendo todos los derechos para reivindicar prioridad,

en y cualquier y todos los perfeccionamientos que se revelan en la invención titulada:

CONECTOR DE CABLE COAXIAL CON MANGO DE AJUSTE DE FRICCIÓN

la cual se encuentra

(marque y complete (a), (b), (c), (d), (e), (f) o (g))

- (a) ☐ solicitud de patente de los Estados Unidos suscrita en la misma fecha de la presente
- (b) ☐ solicitud de patente de los Estados Unidos suscrita el _____
- (c) ☒ solicitud provisional de los Estados Unidos nombrando al anterior inventor(es) para la invención identifica anteriormente.

☒ Etiqueta de Correo Expreso No. EL897444609US, enviado el 2 de febrero de 2006

☐ en obediencia al artículo 3.21 del título 37 del CFR para la inscripción de esta cesión, yo, un CEDENTE que firmo a continuación, por el presente autorizo y le solicito a mi apoderado para que anote abajo la fecha de presentación y número de solicitud cuando se conozcan

(d) ☐ Solicitud de los Estados Unidos No. de Serie No. _____ presentada el _____

(e) ☐ Solicitud Internacional PCT No. / _____ / _____

(f) ☐ Patente No. _____ de los Estados Unidos expedida el _____

(g) ☐ y cualquier equivalente legal de la misma en cualquier país extranjero, incluyendo el derecho de reivindicar prioridad

y en y a todas las patentes de invención a ser obtenidas para dicha invención por la anterior solicitud o cualquier continuación, división, renovación o sucedánea de la misma y en relación con las patentes de invención cualquier nueva publicación o nuevo examen de la misma.

El CEDENTE por el presente garantiza que no ha realizado ni realizará o suscribirá ninguna cesión, venta, acuerdo o gravamen que pueda estar en conflicto con esta cesión.

El CEDENTE adicionalmente garantiza que el CESIONARIO, a petición suya, será provisto prontamente con todos los hechos y documentos pertinentes relativos a dicha invención y dichas patentes de invención y equivalentes legales según sean de conocimiento y a las cuales tenga acceso el CEDENTE y testificará respecto a las mismas en cualquier interferencia, litigio o proceso relativo a la misma y suscribirá y entregará prontamente al CESIONARIO o a sus representantes legales cualquier y todos los documentos, instrumentos o declaraciones juramentadas que se requieran para solicitar, obtener, mantener, expedir y hacer valer dicha solicitud, dicha

invención y dicha patente de invención y dichos equivalentes de la
misma que puedan ser necesarios o convenientes para realizar el
objeto de la presente.

EN TESTIMONIO DE LO CUAL, Yo/Nosotros he(hemos) firmado y
sellado la presente.

AVISO: La fecha de firma debe ser igual a la fecha de suscripción de la solicitud si
se marcó el literal (a) anteriormente.

Fecha: 2/24/06
Fecha de Firma

Firma Ilegible
Julio Rodrigues

Fecha: 2/16/06
Fecha de Firma

Firma Ilegible
Allen L. Malloy

Fecha: 2/16/06
Fecha de Firma

Firma Ilegible
Charles E. Thomas

NOTA: No se requiere testificación, notarización o legalización. Si la cesión es notarizada o
legalizada, solo será evidencia prima facie de la suscripción 35 USC 261. Use la siguiente hoja si
desea la notarización.

☐ Se añade hoja de notarización o legalización

CERTIFICADO NOTARIAL

ESTADO DE TENNESSEE)
)
) Declaración Juramentada
)
CONDADO DE SHELBY)

Yo, Jill Kellis, por el presente certifico que la adjunta
es una copia fiel de la Cesión original inscrita ante la Oficina de
Marcas y Patentes de los Estados Unidos.

Testifica mi firma y sello notarial hoy 27 de noviembre de 2006.

Firma Ilegible
Jill Kellis, Notario Público

SELLO NOTARIAL

Mi Comisión Vence 20 de Mayo de 2008

ESTADO DE TENNESSEE }
CONDADO DE SHELBY }
OFICINA DEL SECRETARIO } Declaración Juramentada

69
DEBBIE STAMSON, Secretario del mencionado Condado por el presente
certifica que JILL KELLIS

ante quién se tomó el anexo instrumento y cuyo nombre se suscribe en
el certificado o prueba del mismo era, al momento de tomar el mismo,
un Notario Público en y para dicho condado, debidamente juramentado y
en ejercicio como tal y autorizado para tomar el mismo, y estaba así
mismo autorizado para tomar reconocimientos de escrituras o
transferencias de tierras dentro del anterior estado; y
adicionalmente que estoy bien familiarizado con su escritura y
verdaderamente considero que la firma en el mismo es su firma
auténtica y adicionalmente que el anexo instrumento ha sido suscrito
y reconocido de conformidad con las leyes del Estado de Tennessee.

En testimonio de lo cual, al presente he firmado el sello de
dicho Condado en Memphis, Tennessee, hoy

4 de DICIEMBRE de 2006

Firma Ilegible Secretario

APOSTILLA

(Convention de La Haye du 5 octubre 1961)

1. País: Estados Unidos de América
 2. Este documento público ha sido firmado por DEBBIE STAMSON
 3. actuando en calidad de SECRETARIO DE CONDADO DEL CONDADO DE SHELBY, TENNESSEE
 4. lleva sello/estampilla de SECRETARIO DE CONDADO DEL CONDADO DE SHELBY, TENNESSEE
-

Certificado

5. En Nashville, Tennessee

6. El Jueves, 7 de diciembre de 2006

7. por RILEY C. DARNELL, SECRETARIO DE ESTADO, ESTADO DE TENNESSEE

8. No. 06-13337



10. Firma

Firma Ilegible

Es traducción fiel y completa de la cual se deja copia en esta oficina para su confrontación.

DVZ//ID-8335/WPCI002G/COLO 11115-801-002-0

Diego F. Vargas
DIEGO F. VARGAS Z.
TRADUCTOR E INTERPRETE OFICIAL
ESPAÑOL - INGLES - INGLES - ESPAÑOL
RES. 0001 DE ENERO 4 DE 1999
MINISTERIO DE JUSTICIA

NO SE ASUME
RESPONSABILIDAD DEL TEXTO

28/06/2006 DEC 18 P 1:04

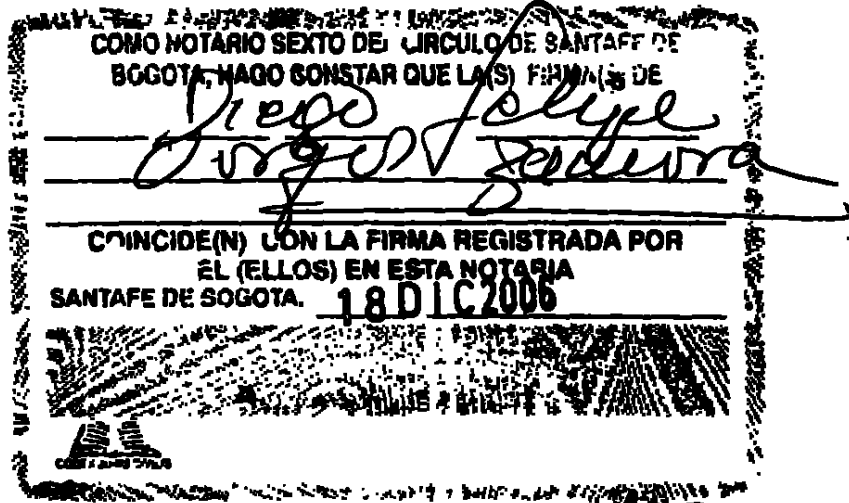
W
JEFE DE LEGALIZACIONES
SECRETARIA DE JUSTICIA D.C.

MINISTERIO DE RELACIONES
EXTERIORES

502980

Diego Vargas

CUYA FIRMATA PARCE EN EL
DOCUMENTO DESEMPENA
LAS FUNCIONES INDICADAS



21

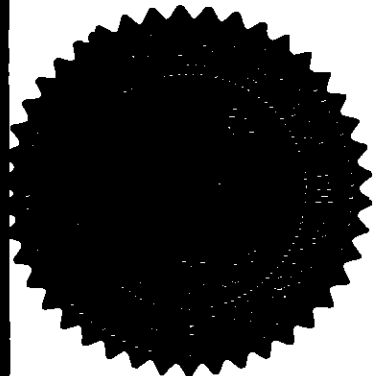
APOSTILLE

(Convention de La Haye du 5 octobre 1961)

1. Country: United States of America
2. This public document has been signed by DEBBIE STAMSON
3. acting in the capacity of COUNTY CLERK OF SHELBY COUNTY, TENNESSEE
4. bears the seal/stamp of COUNTY SEAL OF SHELBY COUNTY, TENNESSEE

Certified

5. at Nashville, Tennessee
6. the Thursday, December 07, 2006
7. by RILEY C. DARNELL, SECRETARY OF STATE, STATE OF TENNESSEE
8. No. 06-13335



10. Signature

Riley C. Darnell
21

STATE OF TENNESSEE }
SHELBY COUNTY } ss.
CLERK'S OFFICE }

72

DEBBIE STAMSON, Clerk of said County do hereby certify that

JILL KELLIS

before whom the annexed instrument was taken, and whose name is subscribed in the certificate of proof thereof, was, at the time of taking the same, a Notary Public in and for said county, duly sworn and acting as such, and authorized to take the same, and was also authorized to take acknowledgments to deeds or conveyances of land within the state aforesaid; and further, that I am well acquainted with his handwriting, and verily believe the signature thereto to be his genuine signature; and further, that the annexed instrument is executed and acknowledged according to the laws of the State of Tennessee.

In testimony whereof, I have hereunto set my hand and affixed the seal of said County, at Memphis, Tennessee, this

4TH

day of

DECEMBER 20 06

Debbie Stancon Clerk.

23

NOTARIAL CERTIFICATE

STATE OF TENNESSEE

)

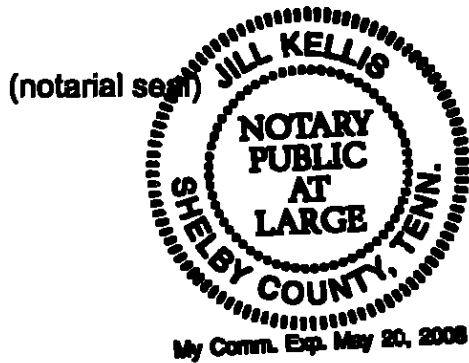
SS:

COUNTY OF SHELBY

)

I, Jill Kellis, do hereby certify that the attached is a true copy of the original Assignment recorded with the United States Patent & Trademark Office.

Witness my hand and Notarial Seal, this 27st day of November 2006.




Jill Kellis - Notary Public



JAN 20 2006

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE FOR INTELLECTUAL PROPERTY AND
DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE

JANUARY 11, 2006

PTAS



103087404A

HOFFMANN & BARON, LLP
GLENN T. HENNEBERGER, ESQ
6900 JERICHO TURNPIKE
SYOSSET, NY 11791

**UNITED STATES PATENT AND TRADEMARK OFFICE
NOTICE OF RECORDATION OF ASSIGNMENT DOCUMENT**

THE ENCLOSED DOCUMENT HAS BEEN RECORDED BY THE ASSIGNMENT DIVISION OF THE U.S. PATENT AND TRADEMARK OFFICE. A COMPLETE MICROFILM COPY IS AVAILABLE AT THE ASSIGNMENT SEARCH ROOM ON THE REEL AND FRAME NUMBER REFERENCED BELOW.

PLEASE REVIEW ALL INFORMATION CONTAINED ON THIS NOTICE. THE INFORMATION CONTAINED ON THIS RECORDATION NOTICE REFLECTS THE DATA PRESENT IN THE PATENT AND TRADEMARK ASSIGNMENT SYSTEM. IF YOU SHOULD FIND ANY ERRORS OR HAVE QUESTIONS CONCERNING THIS NOTICE, YOU MAY CONTACT THE EMPLOYEE WHOSE NAME APPEARS ON THIS NOTICE AT 571-272-3350. PLEASE SEND REQUEST FOR CORRECTION TO: U.S. PATENT AND TRADEMARK OFFICE, MAIL STOP: ASSIGNMENT SERVICES DIVISION. P.O. BOX 1450, ALEXANDRIA, VA 22313.

RECORDATION DATE: 09/19/2005

REEL/FRAME: 017001/0875
NUMBER OF PAGES: 4

BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).
DOCKET NUMBER: 577-755P

ASSIGNOR:

RODRIGUES, JULIO

DOC DATE: 09/02/2005

ASSIGNEE:

THOMAS & BETTS INTERNATIONAL, INC.
501 SILVERSIDE ROAD, SUITE 67
WILMINGTON, DELAWARE 19809

SERIAL NUMBER: 60710724

FILING DATE: 08/23/2005

PATENT NUMBER:

ISSUE DATE:

TITLE: COAXIAL CABLE CONNECTOR WITH FRICTION-FIT SLEEVE

017001/0875 PAGE 2

KIMBERLY WHITE, EXAMINER
ASSIGNMENT DIVISION
OFFICE OF PUBLIC RECORDS

75

Attorney's Docket No.: 577-755P

PATENT

For: ☒ U.S. and/or ☒ Foreign Rights
For: ☒ U.S. Application:
☒ U.S. Provisional Application:
☐ U.S. Patent; or
☐ PCT Application
By: ☒ Inventors or ☐ Present Owners

ASSIGNMENT OF INVENTION

In consideration of the payment by ASSIGNEE to ASSIGNOR of the sum of One Dollar (\$1.00), the receipt of which is hereby acknowledged, and for other good and valuable consideration,

ASSIGNORS: (inventor(s) or person(s) or entity(ies) who own the invention)

Julio Rodrigues

Name

164 W. Nolley Drive

Address

Collierville, TN 38017

USA

Nationality

(If assignment is by person or entity to whom invention was previously assigned and this was recorded in PTO add the following)

Recorded on _____

Reel _____

Frame _____

hereby sells, assigns and transfers to

ASSIGNEE:

Thomas & Betts International, Inc.

(Type or print name of ASSIGNEE)

501 Silverside Road, Suite 67

Address

Wilmington, Delaware 19809

USA

Nationality

and the successors, assigns and legal representatives of the ASSIGNEE,

(complete one of the following)

- ☒ the entire right, title and interest
☐ an undivided _____ percent (____%) interest

for the United States and its territorial possessions

- ☒ and in all foreign countries, including all rights to claim priority,

in and to any and all improvements which are disclosed in the invention entitled:

COAXIAL CABLE CONNECTOR WITH FRICTION-FIT SLEEVE

and which is found in

(check and complete (a), (b), (c), (d), (e), (f), or (g))

- (a) ☐ U.S. patent application executed on even date herewith
(b) ☐ U.S. patent application executed on _____
(c) ☒ U.S. provisional application naming the above inventor(s) for the above-identified invention.
 ☒ Express Mail label No.: EY000403748US, mailed: August 23, 2005
 ☐ To comply with 37 CFR 3.21 for recordal of this assignment, I, an ASSIGNOR signing below, hereby authorize and request my attorney to insert below the filing date and application number when they become known
(d) ☐ U.S. application Serial No. _____ filed on _____
(e) ☐ International application No. PCT/_____/_____
(f) ☐ U.S. Patent No. _____ issued _____
 ☐ A change of address to which correspondence is to be sent regarding patent maintenance fees is being sent separately.
(g) ☐ and any legal equivalent thereof in a foreign country, including the right to claim priority

and, in and to, all Letters Patent to be obtained for said invention by the above application or any continuation, division, renewal, or substitute thereof, and as to Letters Patent any re-issue or re-examination thereof.

ASSIGNOR hereby covenants that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with this assignment.

ASSIGNOR further covenants that ASSIGNEE will, upon its request, be provided promptly with all pertinent facts and documents relating to said invention and said Letters Patent and legal equivalents as may be known and accessible to ASSIGNOR and will testify as to the same in any interference, litigation or proceeding related thereto and will promptly execute and deliver to ASSIGNEE or its legal representatives any and all papers, instruments or affidavits required to apply for, obtain, maintain, issue and enforce said application, said invention and said Letters Patent and said equivalents thereof which may be necessary or desirable to carry out the purposes thereof.

28

IN WITNESS WHEREOF, I/We have hereunto set hand and seal this

WARNING: Date of signing must be the same as the date of execution of the application if item (a) was checked above.

Date: X 9-2-2005
Date of signing

X *Julio Rodriguez*
Julio Rodriguez

NOTE: No witnessing, notarization or legalization is necessary. If the assignment is notarized or legalized then it will only be prima facie evidence of execution 35 USC 261. Use next page if notarization is desired.

☐ Notarization or Legalization Page Added.

TRADUCCIÓN OFICIAL No. 12.18/06b realizada por Diego Vargas, Traductor
Oficial, Resolución No. 0001 de 1999 del Ministerio de Justicia y
registrado ante el Ministerio de Relaciones Exteriores de Colombia.

ESCUDO DE ARMAS DE LA OFICINA DE PATENTES

OFICINA DE MARCAS Y PATENTES DE LOS ESTADOS UNIDOS

SUBSECRETARIO DE COMERCIO PARA LA PROPIEDAD INTELECTUAL Y
DIRECTOR DE LA OFICINA DE MARCAS Y PATENTES DE LOS ESTADOS UNIDOS

11 DE ENERO DE 2006

CÓDIGO DE BARRAS

PTAS

103087404A

HOFFMAN & BARON LLP
DR. GLENN T. HENNEBERGER
6900 JERICHO TURNPIKE
SYOSSET, NY 11791

OFICINA DE MARCAS Y PATENTES DE LOS ESTADOS UNIDOS
NOTIFICACIÓN DE REGISTRO DE DOCUMENTO DE CESIÓN

EL DOCUMENTO ADJUNTO HA SIDO REGISTRADO POR LA DIVISIÓN DE CESIONES
DE LA OFICINA DE MARCAS Y PATENTES DE LOS ESTADOS UNIDOS. UNA COPIA
COMPLETA EN MICROFILME BAJO LOS NÚMEROS DE ROLLO Y CUADRO QUE SE
MENCIONAN A CONTINUACIÓN ESTÁ DISPONIBLE EN LA SALA DE BÚSQUEDAS DE
CESIONES.

POR FAVOR REVISE TODA LA INFORMACIÓN QUE CONTIENE ESTA NOTIFICACIÓN.
LA INFORMACIÓN QUE COMPRENDE ESTA NOTIFICACIÓN DE REGISTRO REFLEJA
LOS DATOS PRESENTES EN EL SISTEMA DE CESIONES DE MARCAS Y PATENTES.
SI USTED ENCUENTRA ALGÚN ERROR O TIENE PREGUNTAS EN RELACIÓN CON ESTA
NOTIFICACIÓN, PUEDE CONTACTAR AL FUNCIONARIO CUYO NOMBRE APARECE EN
ESTA NOTIFICACIÓN EN EL 571-272-3350. POR FAVOR ENVÍE SU PETICIÓN DE
CORRECCIÓN A: U.S. PATENT AND TRADEMARK OFFICE, MAIL STOP: ASSIGNMENT
SERVICES DIVISION, P.O. BOX 1450, ALEXANDRIA, VA 22313.

FECHA DE REGISTRO: 09/19/2005

ROLLO/CUADRO: 017001/0875

NÚMERO DE PÁGINAS: 4

RESUMEN: CESIÓN DEL INTERÉS DEL CEDENTE (VER DOCUMENTOS PARA INFORMACIÓN).

NÚMERO DE ASUNTO: 577-755P

CEDENTE:

RODRIGUES, JULIO

FECHA DEL DOC: 09/02/2005

80

CESIONARIO:

THOMAS & BETTS INTERNATIONAL, INC.

501 SILVERSIDE ROAD, SUITE 67

WILMINGTON, DELAWARE 19809

NÚMERO DE SERIE: 60710724

FECHA DE PRESENTACIÓN: 08/23/2005

NÚMERO DE PATENTE:

FECHA EXPEDICIÓN:

TÍTULO: CONECTOR DE CABLE COAXIAL CON MANGO DE AJUSTE DE FRICCIÓN

017001/0875 PÁGINA 2

KIMBERLY WHITE, EXAMINADOR

DIVISIÓN DE CESIONES

DIVISIÓN DE REGISTROS PÚBLICOS

Asunto del Apoderado No. 577-755P

Para: ☒Derechos de EE.UU y/o ☒ Extranjeros

Para: ☒Solicitud de EE.UU.

☒Solicitud provisional de EE.UU.

☐Patente de EE.UU.; o

☐Solicitud PCT

Por: ☒Inventores o ☐ Actuales Propietarios

CESIÓN DE INVENCION

En contraprestación del pago por parte del CESIONARIO al CEDENTE de la suma de Un Dólar (\$1.00), el recibo de la cual por el presente se reconoce y por otras contraprestaciones legales y válidas

CEDENTES: (inventor(es) o persona(s) o entidad(es) que son propietarios de la invención)

Julio Rodriguez

Nombre

164 W. Nolley Drive

Dirección

Collierville, TN 38017

Estados Unidos de América

Nacionalidad

(Si la cesión es por parte de persona o entidad a quién se le había cedido anteriormente la cesión y la misma fue inscrita ante la oficina de marcas y patentes, complete lo siguiente)

Inscrita el _____

Rollo _____

Cuadro _____

por el presente vende, cede y transfiere a

CESIONARIO:

Thomas & Betts International, Inc.
(Nombre en imprenta del CESIONARIO)

501 Silverside Road, Suite 67
Dirección

Wilmington, DE 19806

Estados Unidos de América
Nacionalidad

y los sucesores, cesionarios y representantes legales del CESIONARIO.

(marque uno de los siguientes)

☒ todo el derecho, título e interés

☐ un _____ por ciento indiviso (____%) de interés

para los Estados Unidos y sus posesiones territoriales

☒ y en todos los países extranjeros, incluyendo todos los derechos para reivindicar prioridad,

en y cualquier y todos los perfeccionamientos que se revelan en la invención titulada:

CONECTOR DE CABLE COAXIAL CON MANGO DE AJUSTE DE FRICCIÓN

la cual se encuentra

(marque y complete (a), (b), (c), (d), (e), (f) o (g))

(a) ☐ solicitud de patente de los Estados Unidos suscrita en la misma fecha de la presente

(b) ☐ solicitud de patente de los Estados Unidos suscrita el _____

(c) ☒ solicitud provisional de los Estados Unidos nombrando al anterior inventor(es) para la invención identifica anteriormente.

☒ Etiqueta de Correo Expreso No. EV000403748US, enviada el 23 de agosto de 2005

☐ en obediencia al artículo 3.21 del título 37 del CFR para la inscripción de esta cesión, yo, un CEDENTE que firmo a continuación, por el presente autorizo y le solicito a mi apoderado

para que anote abajo la fecha de presentación y número de solicitud cuando se conozcan

(d) ☐ Solicitud de los Estados Unidos No. de Serie No. _____ presentada el _____

(e) ☐ Solicitud Internacional PCT No. / _____ / _____

(f) ☐ Patente No. _____ de los Estados Unidos expedida el _____

(g) ☐ y cualquier equivalente legal de la misma en cualquier país extranjero, incluyendo el derecho de reivindicar prioridad

y en y a todas las patentes de invención a ser obtenidas para dicha invención por la anterior solicitud o cualquier continuación, división, renovación o sucedánea de la misma y en relación con las patentes de invención cualquier nueva publicación o nuevo examen de la misma.

El CEDENTE por el presente garantiza que no ha realizado ni realizará o suscribirá ninguna cesión, venta, acuerdo o gravamen que pueda estar en conflicto con esta cesión.

El CEDENTE adicionalmente garantiza que el CESIONARIO, a petición suya, será provisto prontamente de todos los hechos y documentos pertinentes relativos a dicha invención y dichas patentes de invención y equivalentes legales según sean de conocimiento y a las cuales tenga acceso el CEDENTE y testificará respecto a las mismas en cualquier interferencia, litigio o proceso relativo a la misma y suscribirá y entregará prontamente al CESIONARIO o a sus representantes legales cualquier y todos los documentos, instrumentos o declaraciones juramentadas que se requieran para solicitar, obtener, mantener, expedir y hacer valer dicha solicitud, dicha invención y dicha patente de invención y dichos equivalentes de la misma que puedan ser necesarios o convenientes para realizar el objeto de la presente.

EN TESTIMONIO DE LO CUAL, Yo/Nosotros he(hemos) firmado y sellado la presente.

83

AVISO: La fecha de firma debe ser igual a la fecha de suscripción de la solicitud si se marcó el literal (a) anteriormente.

Fecha: 9-2-2005 Firma Ilegible
Fecha de Firma Julio Rodriguez

NOTA: No se requiere testificación, notarización o legalización. Si la cesión es notarizada o legalizada, solo será evidencia prima facie de la suscripción 35 USC 261. Use la siguiente hoja si desea la notarización.

☐ Se añade hoja de notarización o legalización

CERTIFICADO NOTARIAL

ESTADO DE TENNESSEE)
)
) Declaración Juramentada
)
CONDADO DE SHELBY)

Yo, Jill Kellis, por el presente certifico que la adjunta es una copia fiel de la Cesión original inscrita ante la Oficina de Marcas y Patentes de los Estados Unidos.

Firma Ilegible
Jill Kellis, Notario Público

SELLO NOTARIAL

Mi Comisión Vence 20 de Mayo de 2008

ESTADO DE TENNESSEE }
CONDADO DE SHELBY } Declaración Juramentada
OFICINA DEL SECRETARIO }

DEBBIE STAMSON, Secretario del mencionado Condado por el presente certifica que JILL KELLIS

ante quién se tomó el anexo instrumento y cuyo nombre se suscribe en el certificado o prueba del mismo era, al momento de tomar el mismo, un Notario Público en y para dicho condado, debidamente juramentado y en ejercicio como tal y autorizado para tomar el mismo, y estaba así mismo autorizado para tomar reconocimientos de escrituras o transferencias de tierras dentro del anterior estado; y

adicionalmente que estoy bien familiarizado con su escritura y
verdaderamente considero que la firma en el mismo es su firma
auténtica y adicionalmente que el anexo instrumento ha sido suscrito
y reconocido de conformidad con las leyes del Estado de Tennessee.

64

En testimonio de lo cual, al presente he firmado el sello de
dicho Condado en Memphis, Tennessee, hoy

4 de DICIEMBRE de 2006

Firma Ilegible Secretario

APOSTILLA

(Convention de La Haye du 5 octubre 1961)

1. Pais: Estados Unidos de América
2. Este documento público ha sido firmado por DEBBIE STAMSON
3. actuando en calidad de SECRETARIO DE CONDADO DEL CONDADO DE SHELBY, TENNESSEE
4. lleva sello/estampilla de SECRETARIO DE CONDADO DEL CONDADO DE SHELBY, TENNESSEE

Certificado

5. En Nashville, Tennessee
6. El Jueves, 7 de diciembre de 2006
7. por RILEY C. DARNELL, SECRETARIO DE ESTADO, ESTADO DE TENNESSEE
8. No. 06-13335



10. Firma

Firma Ilegible

Es traducción fiel y completa de la cual se deja copia en esta
oficina para su confrontación.

DVZ//ID-8334/WPCL002G/COLO 11115-801-002-0

Diego F. Vargas
DIEGO F. VARGAS Z.
TRADUCTOR E INTERPRETE OFICIAL
ESPAÑOL - INGLES - INGLES - ESPAÑOL
RES. 0001 DE ENERO 4 DE 1999
MINISTERIO DE JUSTICIA

16 de

NO SE ASUME
RESPONSABILIDAD DEL TEXTO

2006 DEC 18 P 1:04

Ugo
Jefe de Legaciones
SANTAFE DE BOGOTA D.C.

MINISTERIO DE RELACIONES
EXTERIORES

502979
Diego Vargas
Cuya firma aparece en el
DOCUMENTO DESEMPENA
LAS FUNCIONES INDICADAS

COMO NOTARIO SEXTO DEL CIRCULO DE SANTAFE DE
BOGOTA, HAGO CONSTAR QUE LA(S) FIRMA(S) DE
Diego Felipe
Ugo Vargas
COINCIDE(N) CON LA FIRMA REGISTRADA POR
EL (ELLOS) EN ESTA NOTARIA
SANTAFE DE BOGOTA. 18 DEC 2006



PA 3457853



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

May 01, 2006

THIS IS TO CERTIFY THAT ANNEXED HERETO IS A TRUE COPY FROM THE RECORDS OF THE UNITED STATES PATENT AND TRADEMARK OFFICE OF THOSE PAPERS OF THE BELOW IDENTIFIED PATENT APPLICATION THAT MET THE REQUIREMENTS TO BE GRANTED A FILING DATE UNDER 35 USC 111.

APPLICATION NUMBER: 60/710,724

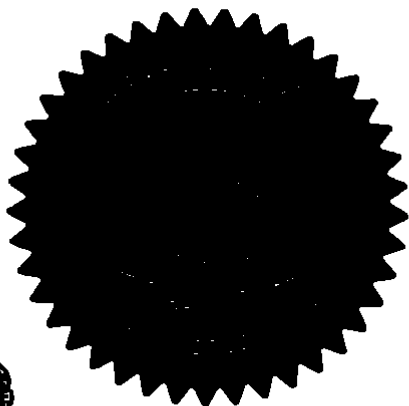
FILING DATE: August 23, 2005

THE COUNTRY CODE AND NUMBER OF YOUR PRIORITY APPLICATION, TO BE USED FOR FILING ABROAD UNDER THE PARIS CONVENTION, IS US60/710,724

**By Authority of the
Under Secretary of Commerce for Intellectual Property
and Director of the United States Patent and Trademark Office**

L. Edelen

**L. EDELEN
Certifying Officer**



Please type a plus sign (+) inside this box →

+

PTO/SB/18 (12-04)

Approved for use through 07/31/2008. OMB 0851-0032

U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PROVISIONAL APPLICATION FOR PATENT COVER SHEET

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.63(c).

INVENTOR(S)

Given Name (first and middle [if any])	Family Name or Surname	Residence (City and either State or Foreign Country)
Julio F.	Rodriguez	Collierville, TN

☐ Additional inventors are being named on the _____ separately numbered sheets attached hereto

TITLE OF THE INVENTION (800 characters max)

COAXIAL CABLE CONNECTOR WITH FRICTION-FIT SLEEVE

Direct all correspondence to:

CORRESPONDENCE ADDRESS

☒ Customer Number 45740 → Place Customer Number
Bar Code Label here

OR

Type Customer Number here

☐ Firm or Individual Name					
Address					
Address					
City	State	ZIP			
Country	Telephone	Fax			

ENCLOSED APPLICATION PARTS (check all that apply)

☒ Specification Number of Pages <u>11</u>	☐ CD(s), Number <u> </u>
☒ Drawing(s) Number of Sheets <u>3</u>	☐ Other (specify) <u> </u>
☐ Application Data Sheet. See 37 CFR 1.76	

Total # of sheets 14 = Application Size Fee \$0.00

METHOD OF PAYMENT OF FILING FEES FOR THIS PROVISIONAL APPLICATION FOR PATENT (check one)

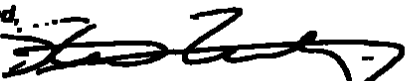
☐ A check or money order is enclosed to cover the filing fees	FILING FEE AMOUNT (\$)
☒ The Director is hereby authorized to charge filing fees or credit any overpayment to Deposit Account Number: <u>20-0778</u>	<u>\$200.00</u>
☐ Payment by credit card. Form PTO-2036 is attached.	

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 name of the U.S. Government agency and the Government contract number are: _____

Respectfully submitted,

SIGNATURE



Date 8/23/05

TYPED or PRINTED NAME

Steven T. Zurchis

REGISTRATION NO. 43,308

(if appropriate)

Docket Number: 677-755P

TELEPHONE

618-822-3850

USE ONLY FOR FILING A PROVISIONAL APPLICATION FOR PATENT

This collection of information is required by 37 CFR 1.61. The information is used by the public to file (and by the PTO to process) a provisional application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 8 hours to complete, including gathering, preparing, and submitting the complete provisional application to the PTO. 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 1480, Alexandria, VA 22313-1480. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1480, Alexandria, VA 22313-1480.

If you need assistance in completing the form, call 1-800-PTO-8199 and select option 2.

P19LARGEREV07

Date 8/23/05 Label Number 6000010274025
I hereby certify that the data indicated above, I deposited this paper or its
with the U.S. Postal Service and that it was addressed for delivery to the
Commissioner for Patents, P.O. Box 1480, Alexandria, VA 22313-1480 by
"FIRST-CLASS MAIL, Post Office to Addressee" Service.
Michael F. Fickert (Print Name) Michael F. Fickert (Signature)

67

Docket No. 577-755P

COAXIAL CABLE CONNECTOR WITH FRICTION-FIT SLEEVE

FIELD OF THE INVENTION

5 The present invention relates generally to connectors for terminating coaxial cable. More particularly, the present invention relates to a coaxial cable connector providing an attachment method relying on frictional forces to reduce the cost of manufacturing the connector components.

BACKGROUND OF THE INVENTION

10 It has long been known to use connectors to terminate coaxial cable so as to connect a cable to various electronic devices such as televisions, radios and the like. Conventional coaxial cables typically include a center conductor surrounded by an insulator. A conductive foil is disposed over the insulator and a braided conductive shield surrounds the foil covered insulator. An outer insulative jacket surrounds the shield. In order to prepare the coaxial cable for termination, the outer jacket is
15 stripped back exposing an extent of the braided conductive shield which is folded back over the jacket. A portion of the insulator covered by the conductive foil extends outwardly from the jacket and an extent of the center conductor extends outwardly from within the insulator. Such a prepared cable may be terminated in a conventional coaxial connector.

20 Prior art coaxial connectors generally include a connector body having an annular collar for accommodating a coaxial cable, an annular nut rotatably coupled to the collar for providing mechanical attachment of the connector to an external device and an annular post interposed between the collar and the nut. Upon assembly to a coaxial cable, the annular post is inserted between the foil covered insulator and the
25 conductive shield of the cable. A resilient sealing O-ring may also be positioned between the collar and the nut at the rotatable juncture thereof to provide a water resistant seal thereat. The collar includes a cable receiving end for insertably receiving an inserted coaxial cable and, at the opposite end of the connector body, the

88^r

nut includes an internally threaded end extent permitting screw threaded attachment of the body to an external device.

5 This type of coaxial connector further includes a locking sleeve to secure the cable within the body of the coaxial connector. The locking sleeve, which is typically formed of a resilient plastic, is securable to the connector body to secure the coaxial connector thereto. In this regard, the connector body typically includes some form of structure to cooperatively engage the locking sleeve. Such structure may include one or more recesses or detents formed on an inner annular surface of the connector body, which engages cooperating structure formed on an outer surface of the sleeve. A
10 coaxial cable connector of this type is shown and described in commonly owned U.S. Patent No. 6,530,807.

15 Such coaxial connectors are generally manufactured in large quantities at relatively low costs. Two cost factors in manufacturing these connectors are the complexity and the material of the individual connector components that are required for assembly. For example, it is desirable from a cost perspective to manufacture the connector components from plastic. However, molding complex structural features, such as engagement recesses and detents, into the internal diameter of the connector body are not practical, because such features hamper the opening of the mold. Methods to circumvent this mold limitation are also costly.

20 It is, therefore, desirable to provide a coaxial connector having simply designed and easily manufactured components. In particular, it would be desirable to provide a coaxial connector that eliminates the need for molding complex engagement structure into the inner annular surface of the connector body.

OBJECTS AND SUMMARY OF THE INVENTION

25 It is an object of the present invention to provide a coaxial cable connector for terminating a coaxial cable.

It is a further object of the present invention to provide a coaxial cable connector having simpler components and, therefore, a lower manufacturing cost.

In the efficient attainment of these and other objects, the present invention provides a coaxial cable connector. The connector of the present invention generally includes an annular post defining an axial bore therein, a cylindrical connector body coupled to the post, a nut rotatably coupled to the post and a sleeve movably
 5 connected to the connector body. The sleeve includes at least one radially outwardly extending ridge formed on an outer surface thereof, which frictionally engages an inner surface of the connector body. As a result, the inner surface of the connector body does not require a recess or other engagement structure formed thereon.

In a preferred embodiment, the sleeve and connector body are made of plastic
 10 and the sleeve includes a plurality of raised ridges formed thereon. Each ridge is further preferably defined by a rearwardly facing perpendicular wall and a forwardly facing chamfered wall. Also, the ridges are further preferably divided into two axially spaced forward ridges and two axially spaced rearward ridges. The forward ridges have a first diameter and the rearward ridges have a second diameter that is slightly
 15 larger than the first diameter so that a greater holding force is provided by the interference-fit upon full insertion of the sleeve into the body. A rearward-most locking ridge and an abutment surface may also be provided adjacent a flanged head portion of the sleeve to enhance locking of the sleeve into the connector body.

The forward end of the sleeve is further preferably formed with a plurality of
 20 flexible fingers extending in the forward direction for gripping a cable inserted into the connector. The fingers are forced to deflect radially inwardly by an internal ramp portion of the connector body during insertion of the sleeve into the body.

A preferred form of the coaxial connector, as well as other embodiments, objects, features and advantages of this invention, will be apparent from the following
 25 detailed description of illustrative embodiments thereof, which is to be read in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a cross-sectional view of the coaxial cable connector of the present invention in an open position.

96

Figure 2 is a cross-sectional view of the connector shown in Figure 1 in a closed position with a cable secured thereto.

Figures 3A and 3B are perspective views of the sleeve component of the coaxial cable connector of the present invention.

5 **DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS**

The present invention is directed to connectors for terminating coaxial cable. Coaxial connectors of this type are shown and described in commonly owned U.S. Patent No. 6,530,807 issued August 28, 2003, the disclosure of which is incorporated herein by reference.

10 Referring to Figures 1 and 2, the coaxial cable connector 10 of the present invention is shown. The connector 10 generally includes four components: a connector body 12; an annular post 14; a rotatable nut 16; and a movable locking sleeve 18. It is however conceivable that the connector body 12 and the post 14 can be integrated into one component and/or another fastening device other than the
15 rotatable nut 16 can be utilized.

The connector body 12 is an elongate generally cylindrical member, which is preferably made from plastic to minimize cost. Alternatively, the body 12 may be made from metal or the like. The body 12 has one end 20 coupled to the post 14 and the nut 16 and an opposite sleeve receiving end 22 for insertably receiving the sleeve
20 18. The sleeve receiving end 23 defines an inner engagement surface 23 for frictionally engaging the sleeve 18, as will be described in further detail below.

The annular post 14 includes a flanged base portion 24, which provides for press-fit securement of the post within a post receiving space in the nut 16. The annular post 14 further includes an annular tubular extension 26 extending within the
25 body 12 and into the sleeve 18. The distal end of the tubular extension 26 preferably includes a radially outwardly extending ramped flange portion or "barb" 28 for compressing the outer jacket of the coaxial cable against the internal diameter of the body to secure the cable within the connector. Alternatively, and/or depending on the

96

method of forming the post 14, the barb 28 may be more rounded as opposed to a ramped flange. In any event, as will be described in further detail hereinbelow, the extension 26 of the post 14, the body 12 and the sleeve 18 define an annular chamber 30 for accommodating the jacket and shield of the inserted coaxial cable.

5 The nut 16 may be in any form, such as a hex nut, knurled nut, wing nut, or any other known attaching means, and is rotatably coupled to the post 14 for providing mechanical attachment of the connector 10 to an external device. The nut 16 includes an internally threaded end extent 32 permitting screw threaded attachment of the connector 10 to the external device. The sleeve 18 and the internally threaded
10 end extension 32 define opposite ends of the connector 10. A resilient sealing O-ring 34 may be positioned between the body 12, the post 14 and the nut 16 at the rotatable juncture thereof to provide a water resistant seal thereat.

 Referring additionally to Figures 3A and 3B, the locking sleeve 18 is a generally tubular member having a rearward cable receiving end 36 and an opposite
15 forward connector insertion end 38, which is movably coupled to the inner surface 23 of the connector body 12. As will be described in further detail hereinbelow, the outer cylindrical surface of the sleeve 18 includes a plurality of ridges or projections 40, which allows for the movable connection of the sleeve 18 to the connector body 12 such that the sleeve is axially moveable along arrow A of Figures 1 and 2, towards
20 nut 16 from a first position shown in Figure 1, which loosely retains a cable 60 within the connector 10, to a more forward second position shown in Figure 2, which secures the cable within the connector.

 Specifically, formed on the outer cylindrical surface of the sleeve 18, between the rearward cable receiving end 36 and the forward insertion end 38 is at least one
25 radially outwardly extending ridge or projection 40. Preferably, there are a plurality of ridges 40 to increase the gripping force between the sleeve 18 and the inner surface 23 of the connector body 12. Each ridge 40 is further preferably defined by a rearwardly facing perpendicular wall 44 and a forwardly facing chamfered wall 46. This structure facilitates forward insertion of the sleeve 18 into the body 12 in the
30 direction of arrow A and resists rearward removal of the sleeve from the body.

In a preferred embodiment, the sleeve 18 includes two axially spaced forward ridges 40a having a first diameter and two axially spaced rearward ridges having a second diameter which is slightly larger than the first diameter. The first diameter of the forward ridges 40a is slightly larger than the inner diameter of the sleeve receiving end 22 of the body 12 so that an interference-fit is provided upon insertion of the sleeve 18 into the body in the first position, as shown in Figure 1. The first diameter of the two forward ridges 40a that are inside and engaging the inner surface 23 of the body 12 in the first position causes an interference fit to hold the sleeve 18 in place during transportation and yet allows manual removal and reinsertion of the sleeve if necessary for installation. The second diameter of the two rearward ridges 40b is slightly larger than the first diameter of the forward ridges 40a. This helps prevent the sleeve from being inadvertently pushed inside the collar prematurely and provides an interference fit between the sleeve 18 and the body 12 with a greater holding force when the sleeve is in its closed position.

Moreover, the ridges or projections 40 of the present invention may take other forms. For example, while each ridge 40 is shown in the drawings to be continuous about the circumference of the locking sleeve 18, it is conceivable to provide gaps or spaces in one or more ridges to increase the ridge's flexibility. Also, it is possible to design one ridge in a manner which makes it more or less flexible than another ridge.

The locking sleeve 18 further preferably includes a flanged head portion 48 disposed at the rearward cable receiving end 36 thereof. The head portion 48 has an outer diameter larger than the inner diameter of the body 12 and includes a forward facing perpendicular wall 50, which serves as an abutment surface against which the rearward end of the body 12 stops to prevent further insertion of the sleeve 18 into the body 12. A rearward most locking ridge 40c having a forward facing chamfered wall 46 may also be provided adjacent the head portion 48 for providing additional gripping strength between the sleeve 18 and the body 12.

The forward end 38 of the sleeve 18 is further preferably formed with a plurality of flexible fingers 52 extending in the forward direction. As will be discussed in further detail below, these fingers 52 are forced to deflect radially

inwardly by an internal ramp portion 54 of the connector body 12 during insertion of the sleeve 18 into the body. As the fingers 52 are deflected inward, they engage the outer jacket of the cable 60 to enhance the gripping of the cable within the connector 10. The fingers 52 may be formed simply by providing longitudinal slots or recesses at the forward end of the sleeve 18. A lateral groove (not shown) may also be provided to increase flexibility of the fingers 52.

Furthermore, the fingers 52 may include a tapered end 53 so as to form a relatively sharp edge. The sharp edge 53 would tend to bite into the cable 60 upon deflection of the fingers 52 by the internal ramp portion 54 of the connector body 12 to provide even greater gripping force and prevent the cable from being pulled out of the connector.

The connector 10 of the present invention is constructed so as to be supplied in the assembled condition shown in Figure 1, wherein the forward ridges 40a of the sleeve 18 engage the inner surface of the body 12 to secure the sleeve in its first position. In such assembled condition, and as will be described in further detail hereinbelow, a coaxial cable 60 may be inserted through the rearward cable receiving end 36 of the sleeve 18. The sleeve 18 may then be moved from the first position loosely retaining the cable to the second position which is axially forward thereby locking the cable within the connector.

It is however contemplated that the sleeve 18 may be provided separately from the rest of the connector 10, which, in a manner which will be described in further detail hereinbelow, will allow the coaxial cable 60 to be first inserted directly into the post 14 unobstructed by the sleeve 18. Thereafter, the sleeve 18, which has been earlier placed around the cable 60, may be attached to the connector body 12 where it can be moved from the first position to the second position locking the cable within the connector.

Having described the components of the connector 10 in detail, the use of the connector in terminating a coaxial cable may now be described with respect to Figure 2. Coaxial cable 60 includes an inner conductor 62 formed of copper or similar

94

conductive material. Extending around the inner conductor 62 is an insulator 64 formed of a suitably insulative plastic. A metallic foil 66 is disposed over the insulator 64 and a metallic shield 68 is positioned in surrounding relationship around the foil covered insulator. Covering the metallic shield 68 is an outer insulative jacket 70.

Cable 60 is prepared in conventional fashion for termination by stripping back the jacket 70 exposing an extent of shield 68. A portion of the foil covered insulator 64 extends therefrom with an extent of conductor 62 extending from insulator 64. After an end extent of shield 68 is folded back about jacket 70, the cable 60 may be inserted into the connector 10 with the sleeve 18 already coupled to the body 12, as shown in Figure 1. In this technique, the prepared cable 60 is inserted through the rearward end 36 of the sleeve 18 and the extension 26 of the post 14 is inserted between the foil covered insulator 64 and the metallic shield 68 such that the shield and the jacket 70 reside within the annular region 30 defined between the post 14 and the sleeve 18. When the sleeve 18 is coupled to the body 12 in the first position, as shown in Figure 1, sufficient clearance is provided between the sleeve and the post 14 so that the tubular post extension 26 may be easily interposed between the insulator 64 and the shield 68 of the cable 60.

Once the cable 60 is properly inserted, the sleeve 18 may be moved axially forward in the direction of arrow A from the first position shown in Figure 1, to the second position shown in Figure 2. When the sleeve 18 is moved axially forward, the larger diameter rearward ridges 40b formed on the outer surface of the sleeve frictionally engage the inner surface of the body 12 to secure the sleeve within the body. Such movement is facilitated by the forward facing chamfered walls 46 of the ridges 40. The sleeve 18 is moved axially forward until the forward facing abutment surface 50 of the sleeve head portion 48 engages the rearward end of the body 12. A suitable compression tool may be used to effect movement of the sleeve 18 from its first position to its second position securing the cable 60 to the connector 10.

In certain installation settings, the installer may not have clear and convenient access when terminating the cable 60. Therefore, it may be difficult for the installer

95

to blindly insert the cable 60 through the cable receiving end 36 of the sleeve 18 while connected to the connector body 12. In such situations, the present invention contemplates the ability to detachably remove the sleeve 18 from the body 12 so that the cable 60 may be directly connected to the tubular extension 26 of the post 14.

5 In these situations, the sleeve 18 is detachably removed from the body 12 in a manner facilitated as above described. The sleeve 18 is then slipped over the cable 60 and moved to a convenient position along the cable length. The end of the foil covered insulator 64 may then be inserted directly into the post extension 26 so that the extension is interposed between the foil covered insulator 64 and the shield 68.

10 Thereafter, the sleeve 18 may be brought up along the cable 60 and the forward insertion end 38 of the sleeve may be inserted into the sleeve receiving end 22 of the body 12. Thereafter, as described above, the sleeve 18 may be moved from the first position shown in Figure 1 to its second position shown in Figure 2.

15 In either case, as the sleeve 18 moves to this second position, the jacket 70 and shield 68 of the cable 60 begins to become compressively clamped within the annular region 30 between the barb 28 of the post 14 and the inner surface of the sleeve 18. In this regard, the inner surface of the sleeve 18 may be provided with an inwardly directed shoulder portion 49 to facilitate compression of the cable jacket 70 against the barb 28 of the post 14. Also, as the sleeve 18 moves to its second position, the
20 sleeve fingers 52 are urged inwardly by the ramp 54 formed in the connector body to further engage the cable jacket 70.

25 When the sleeve 18 is in its second, closed position, as shown in Figure 2, all of the ridges 40 are frictionally engaged with the inner surface of the connector body 12 to prevent the sleeve from being easily removed from the assembly 10. Secondly, these ridges 40 provide redundant sealing points to prevent the ingress of water or other contaminants into the connector assembly 10. This feature eliminates the use of a separate o-ring and further reduces the manufacturing costs of the connector.

 Thus, as a result of the present invention, a plastic connector body 12 can be utilized without the need for molding engagement structure into the inner surface of

96

the body. Instead, the present invention provides an attachment method of the sleeve 18 to the body 12 that relies on frictional forces. Moreover, in the installed condition, the cable 60 is prevented from being easily pulled out of the connector by three points of pressure: a) the ridges 40 frictionally engaged against the inner surface of the body 12; b) the deflected fingers 52 exerting pressure on the cable caused by the inner slanted surface 54 of the body; and c) the cable jacket being compressed between the post barb 28 and the inner surface 49 of the sleeve 18.

Although the illustrative embodiments of the present invention have been described herein with reference to the accompanying drawings, it is to be understood that the invention is not limited to those precise embodiments, and that various other changes and modifications may be effected therein by one skilled in the art without departing from the scope or spirit of the invention.

Various changes to the foregoing described and shown structures will now be evident to those skilled in the art. Accordingly, the particularly disclosed scope of the invention is set forth in the following claims.

97

What is Claimed is:

1. A coaxial cable connector comprising:
a connector body having a sleeve receiving end defining an inner engagement surface; and
a locking sleeve having at least one projection formed on an outer surface thereof for frictionally engaging said inner engagement surface of said connector body when said locking sleeve is moved from a first position to a second position.
2. A coaxial cable connector as defined in Claim 1, further comprising:
an annular post disposed within said connector body; and
a nut rotatably coupled to said post.
3. A coaxial cable connector as defined in Claim 1, wherein said connector body is made from a plastic material.
4. A coaxial cable connector as defined in Claim 1, wherein said sleeve is made from a plastic material.
5. A coaxial cable connector as defined in Claim 1, wherein said locking sleeve includes a rearward cable receiving end and an opposite forward connector insertion end, said forward connector insertion end being formed with at least one flexible finger for gripping a cable inserted in said sleeve.
6. A coaxial cable connector as defined in Claim 1, wherein said locking sleeve includes a forward projection defining a first sleeve diameter and a rearward projection defining a second sleeve diameter, said second sleeve diameter being larger than said first sleeve diameter.

10
3

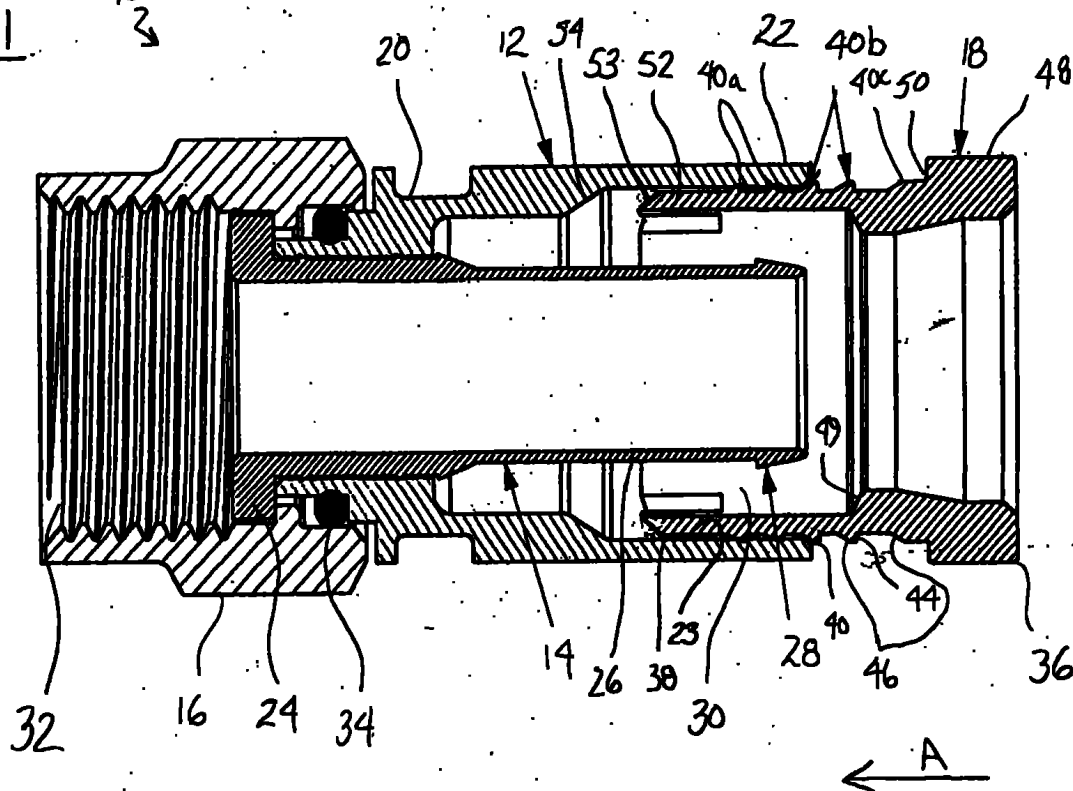
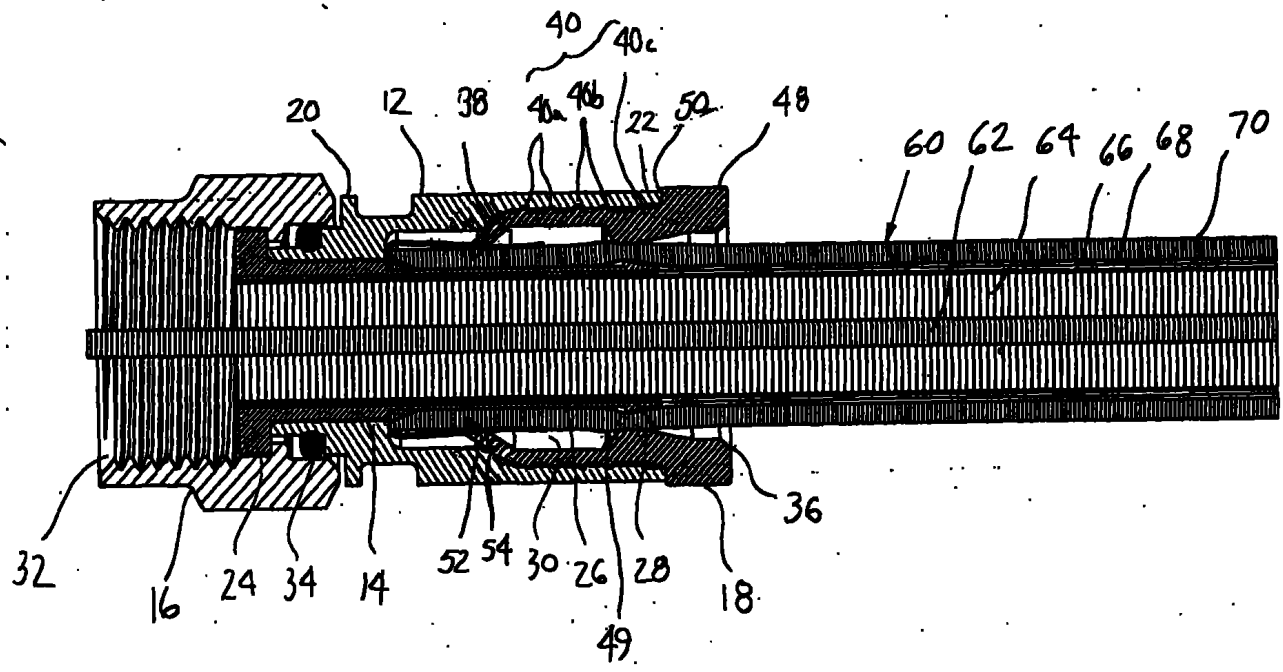


FIG. 2

10
2



Express Mail No.: EV0000027481US
 Applicant: Rodriguez
 Title: Coaxial Cable Connector with Friction-Fit
 Sleeve
 Our Docket: 577-753P
 Page 2 of 3

FIG. 3A

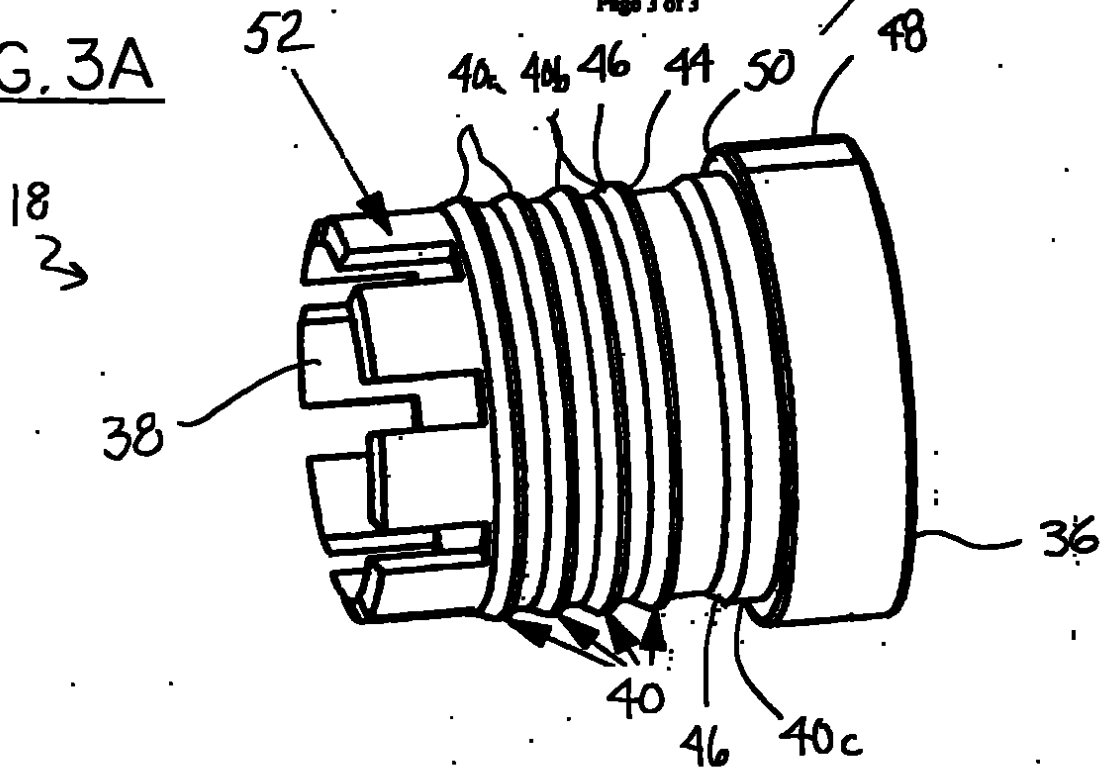
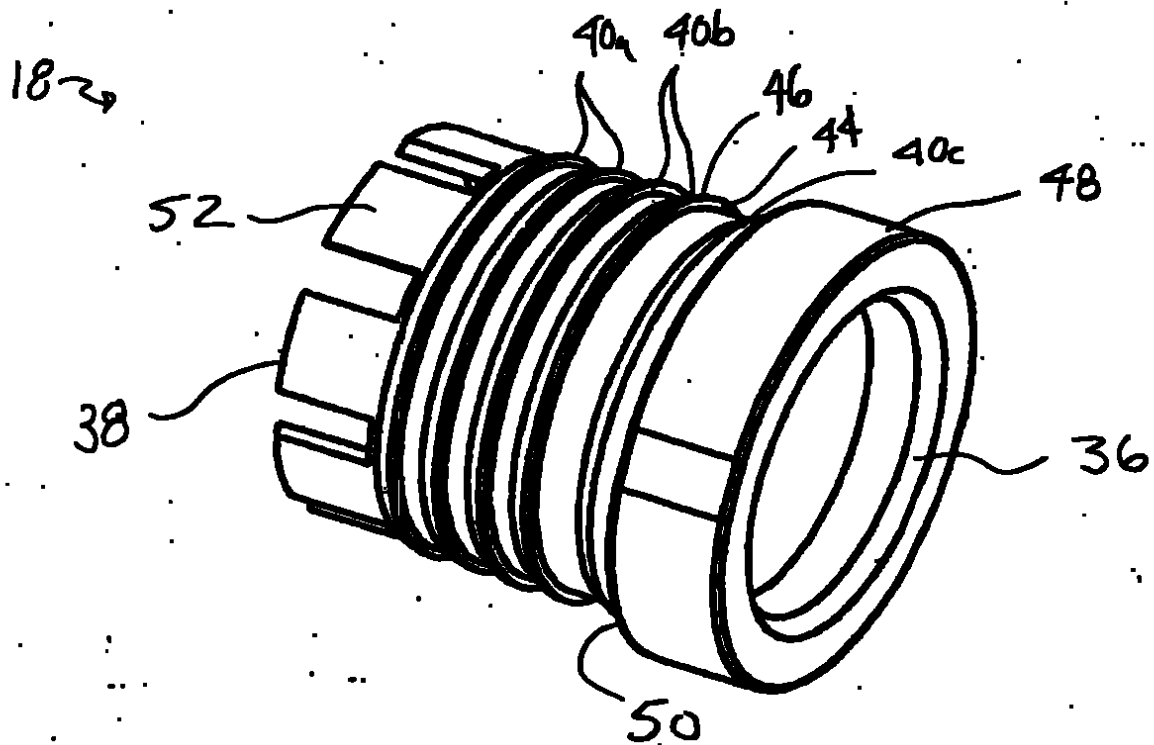


FIG. 3B



Best Available Copy



LOS ESTADOS UNIDOS DE AMERICA

A TODO AQUEL A QUIEN CONCIERNA LO PRESENTE

DEPARTAMENTO DE COMERCIO DE LOS ESTADOS UNIDOS

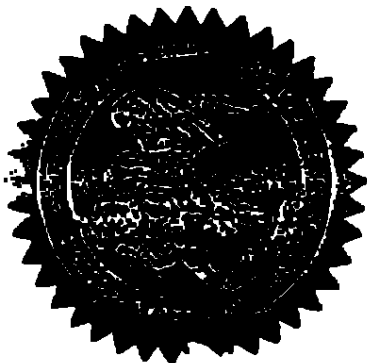
Oficina de Patentes y Marcas de los Estados Unidos

Mayo 01, 2006

LA PRESENTE ES PARA CERTIFICAR QUE ADJUNTA A LA MISMA HAY UNA COPLA FIEL DE LOS REGISTROS DE LA OFICINA DE PATENTES Y MARCAS DE LOS ESTADOS UNIDOS DE LOS DOCUMENTOS DE LA SOLICITUD DE PATENTE IDENTIFICADA EN LO QUE SIGUE, QUE CÚMPLEN LOS REQUISITOS PARA OTORGARLE UNA FECHA DE PRESENTACIÓN BAJO 35 USC 111.

NÚMERO DE SOLICITUD: 60/710,724
FECHA DE PRESENTACIÓN: Agosto 23, 2005

EL CÓDIGO DE PAÍS Y NÚMERO DE SU SOLICITUD DE PRIORIDAD, PARA SER USADA PARA PRESENTACIÓN EN EL EXTRANJERO DE ACUERDO CON LA CONVENCION DE PARIS, ES US60/710,724



Por la Autoridad del
De acuerdo con la Secretaría de Comercio para la
Propiedad Intelectual y Director de la Oficina de Marcas
y Patentes de los Estados Unidos

(Aparece firma ilegible)
L. EDELEN
Funcionario Certificador

2/20/07
HEATHER EUGENIA ALANSON BUTTERWORTH
TRANSLATOR & INTERPRETER OF "..."
RESOLUTION 2612 DE SEPT. 15/99 MANUJUSTICIA

Por favor coloque un signo (+) dentro de esta casilla → ☐

PTO/SB/16 (12-04)

Aprobado para uso hasta 07/31/2006. OMB 0651-0032

Oficina de Marcas y Patentes de los Estados Unidos;

DEPARTAMENTO DE COMERCIO DE LOS ESTADOS UNIDOS

De acuerdo con el acta de reducción de papeleo de 1995, no se requiere que ninguna persona responda para una recolección de información a menos que este muestre un número de control OMB válido.

HOJA DE PORTADA PARA SOLICITUD PROVISIONAL PARA PATENTE

Esta es una petición para presentar una SOLICITUD PROVISIONAL PARA PATENTE de acuerdo con el 37 CFR 1,53(c).

INVENTOR(ES)		
Nombre (Primero y otro si tiene)	Nombre de familia o apellido	Residencia (Ciudad y Estado o país extranjero)
Julio F.	Rodrigues	Collierville, TN
☐ <i>Inventores adicionales que se mencionan en las _____ hojas numeradas en forma separada adjuntas a esta</i>		
TÍTULO DE LA INVENCION (500 Caracteres Máximo)		
CONECTOR DE CABLE COAXIAL CON MANGUITO DE AJUSTE POR FRICCIÓN		
<i>Dirigir toda la correspondencia a:</i>		
Dirección de Correspondencia		
☒ Número de Cliente	45740	
Digite Número de Cliente o		
☐ Firma o Nombre de individuo		<i>Coloque aquí Etiqueta de Código de Barras Número de Cliente</i>
Dirección		
Ciudad	Estado	Zip

País

Teléfono

E-mail

Partes de la Solicitud Incluidas (marque todas las que apliquen)☒ Especificación *Número de páginas* 11☒ Dibujo(s) *Número de páginas* 3☐ Hoja de Datos de la Solicitud. Ver 37 CFR 1.78☐ CD(s), Número _____☐ Otro (especifique) _____Total # de Hojas **14** = Tarifa de tamaño de solicitud **\$0.00****MÉTODO DE PAGO DE TARIFAS DE PRESENTACIÓN PARA ESTA SOLICITUD PROVISIONAL PARA PATENTE (marque una)**☐ Se incluye cheque o giro para cubrir las tarifas de presentación y la tarifa de tamaño de solicitud.☒ Por medio de la presente se autoriza al director a cargar las tarifas de presentación y tarifa de tamaño de solicitud (si aplica) o acreditar cualquier sobre pago al Número de Cuenta: 20-0776☐ Pago por tarjeta de crédito.

Se adjunta forma PTO-2038

\$200.00**CANTIDAD DE TARIFA DE PRESENTACIÓN**

La invención fue hecha por una agencia del Gobierno de los Estados Unidos o bajo un contrato con una agencia del gobierno de los Estados Unidos.

☒ No.☐ Si, el nombre de la agencia del Gobierno de Estados Unidos y número de contrato de Gobierno es: _____

Respetuosamente presentado,

Fecha

8/23/05

FIRMA (Aparece firma)

Nombre escrito o impreso

No. REGISTRO **43,308**
(si es apropiado)**Steven T. Zuschlag**

No. Registro

577-755P

TELÉFONO

516-822-3550

Copia suministrada por USPTO de la IFW Image Database en 04/25/2006

BEATRIZ ENGERRA ALARCÓN BOUTINER
 TRADUCTORA E INTERPRETE OFICIAL
 RESOLUCION 2512 DE SEPT. 15/99 MINJUSTICIA

USE SOLO PARA PRESENTAR UNA SOLICITUD PROVISIONAL PARA PATENTE

Esta recolección de información se requiere por el 37 CFR 1.51. Se requiere la información para obtener o retener un beneficio por el público que es registrar (y mediante el PTO para procesar) una solicitud provisional. Regido confidencialmente por 35 U.S.C. 122 y 37 CFR 1.14. Se estima que esta recolección toma 8 horas para completarse, e incluye reunir, preparar, y presentar el formulario de solicitud completo a la PTO. El tiempo variará del caso individual. Cualquier comentario sobre la cantidad de tiempo que usted necesita para completar este formulario y/o sugerencias para reducir este límite, se debe enviar al Funcionario Jefe de Información, Oficina de Marcas y Patentes en los Estados Unidos, Departamento de Comercio de los Estados Unidos, P.O. Box 1450, Alexandria, VA 22313-1450. NO ENVIAR TARIFAS O FORMULARIOS COMPLETOS A ESTA DIRECCIÓN. ENVIARLAS A: Comisionado para patentes, P.O. Box 1450, Alexandria, VA 22313-1450.

Si Usted necesita asistencia en la terminación de la forma, llame al 1-800-PTO-9199 y seleccione la opción 2.

P19LARGE/REV07

CERTIFICADO DE CORREO EXPRESO

Fecha: 8/23/05 Etiqueta No. EV000403748US

Por medio de la presente certifico que, he depositado este documento o la tarifa con el servicio postal de los Estados Unidos y que este está dirigido para suministro al comisionado para patentes P.O. Box 1450, Alexandria, VA 22313-1450 por el servicio "oficina postal CORREO EXPRESO al Destinatario".

(Aparece Nombre legible)
(Nombre Impreso)

(Aparece firma)
(Firma)

Copia suministrada por USPTO de la IFW Image Database en 04/25/2006

BEATRIZ EUGENIA ALARCON GUTIERREZ
TRADUCTORA E INTERPRETE OFICIAL
RESOLUCION 2512 DE SEPT. 15/83 MINUTERIA

REVINDICACIONES:

1. Un conector de cable coaxial que comprende:

Un cuerpo conector que tiene un extremo receptor de manguito que define una superficie de acoplamiento interior; y

Un manguito de aseguramiento que tiene al menos una proyección formada sobre una superficie exterior de esta para acoplar friccionalmente dicha superficie de acoplamiento interior de dicho cuerpo conector cuando dicho manguito de aseguramiento se mueve desde una primera posición a una segunda posición

2. Un conector de cable coaxial como se definió en la reivindicación 1, que comprende además: un poste anular dispuesto dentro de dicho cuerpo conector; y una tuerca rotablemente acoplada de dicho poste.
3. Un conector de cable coaxial como se definió en la reivindicación 1, en donde dicho cuerpo conector se hace de un material plástico.
4. Un conector de cable coaxial como se definió en la reivindicación 1, en donde dicho manguito se hace de un material plástico.
5. Un conector de cable coaxial como se definió en la reivindicación 1, en donde dicho manguito de aseguramiento incluye un extremo receptor de cable trasero y un extremo de inserción conector delantero opuesto,

106

dicho extremo de inserción conector delantero está formado con al menos un dedo flexible para agarrar un cable insertado en dicho manguito.

6. Un conector de cable coaxial como se definió en la reivindicación 1, en donde dicho manguito de aseguramiento incluye una proyección delantera que define un primer diámetro de manguito y una proyección trasera que define un segundo diámetro de manguito, dicho segundo diámetro de manguito es más grande que dicho primer diámetro de manguito.

107

Correo Expreso No.: EV000903748U6
 Solicitante: Rodriguez
 Título: Conector de Cable Coaxial con
 Manguito con Ajuste por Fricción
 Nuestro Registro: 577-755P
 Página 3 de 3

FIG. 3A

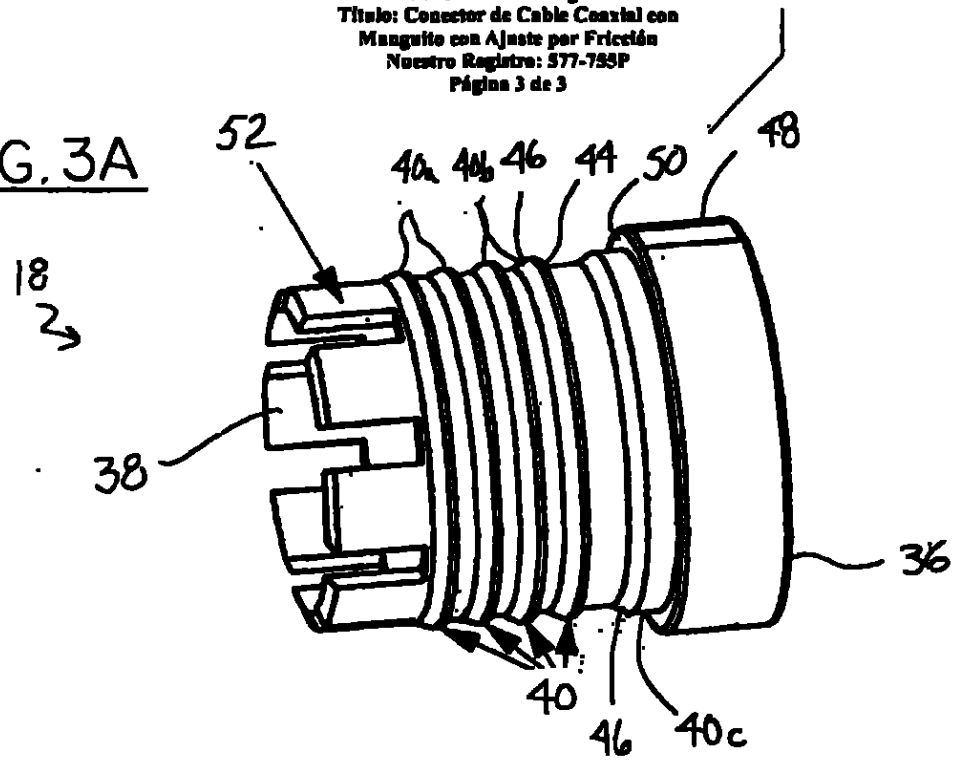
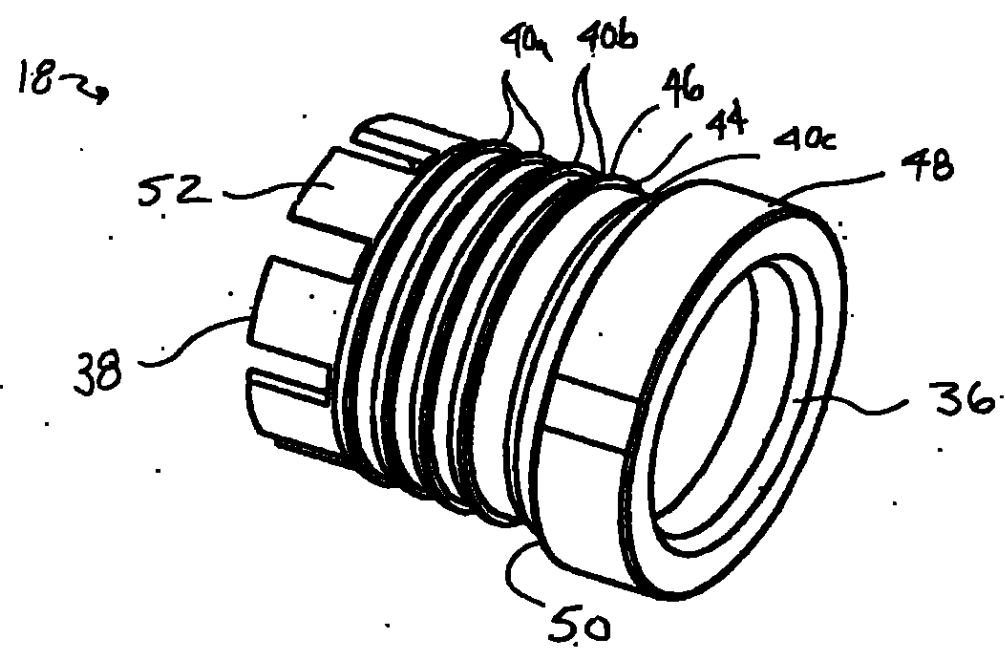


FIG. 3B



Mejor Copia Disponible

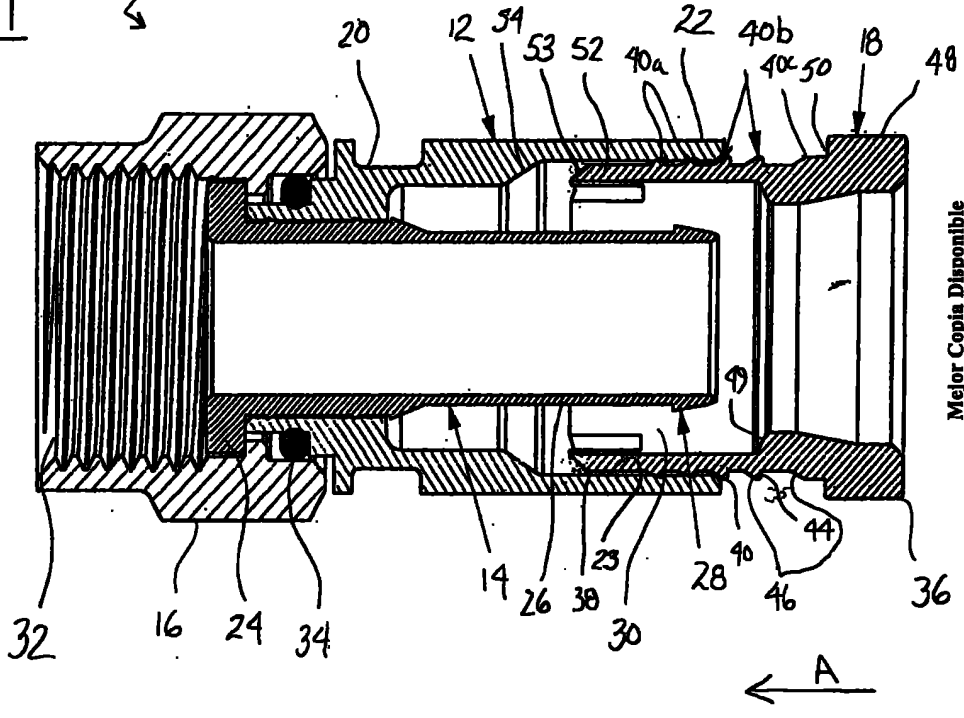
Copia suministrada por USPTO de la IPW Image Database en 04/25/2006

BEATRIZ EDGEMIA BLANCON OSTREY
 TRADUCTORA E INTE. J. OTICIAL
 RESOLUCION 2919 DE SEPT. 15/93 MANUFACTURA

FIG. 1

10
2

Correa Express No.: EV000003748105
 Solicitante: Rodríguez
 Título: Conector de Cable Cónico en
 Material de Aluminio y Plástico
 Número de Registro: 777-758P
 Página 1 de 2

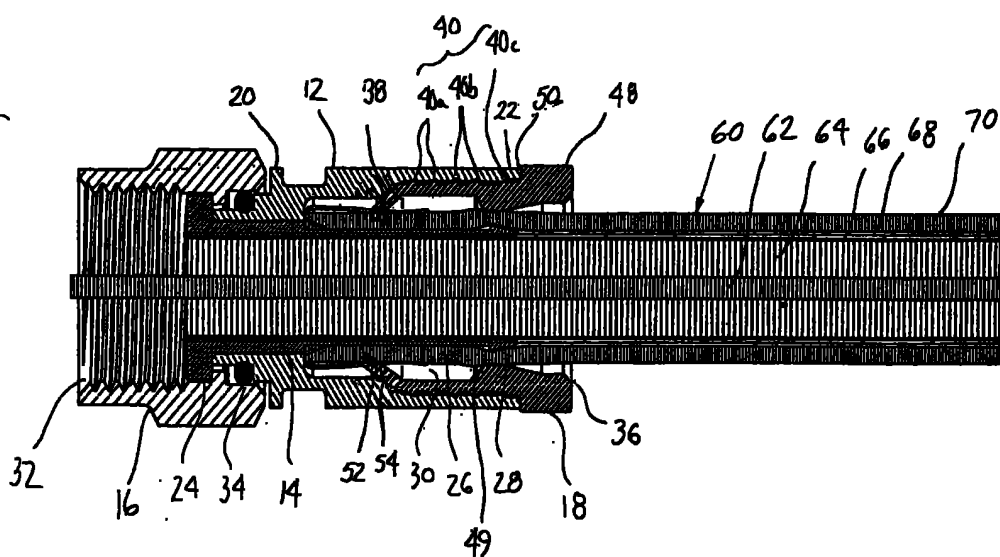


Copia autorizada por USPTO de la IPW Image Database en 04/25/2006

Correa Espuma No. EV00093748US
 Solicitante: Redigmes
 Titulo: Conector de Cable Cardal con
 Manubrio con Ajuste por Friccion
 Nuestro Registro: 577-755P
 Pagina 2 de 3

FIG. 2

10
2



Mejor Copia Disponible

Copia suministrada por USPTO de la IPV Image Database en 04/25/2006

35995
 REATREZ EMBEDIA ALANSON BORTONOFF
 TRANDUCTORA E INE TPEITE OFIC...
 RESOLUCION 2013 DE SEPT. 15/03 ADMINISTRACION

99
110

PA 1458058

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

May 02, 2006

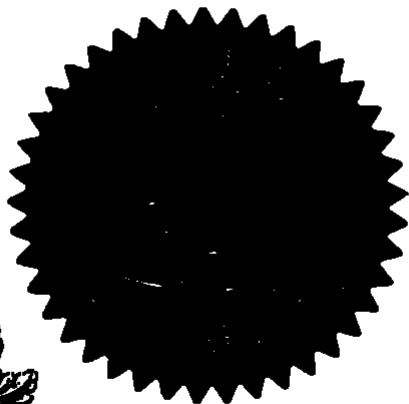
THIS IS TO CERTIFY THAT ANNEXED HERETO IS A TRUE COPY FROM THE RECORDS OF THE UNITED STATES PATENT AND TRADEMARK OFFICE OF THOSE PAPERS OF THE BELOW IDENTIFIED PATENT APPLICATION THAT MET THE REQUIREMENTS TO BE GRANTED A FILING DATE UNDER 35 USC 111.

APPLICATION NUMBER: 60/764,450

FILING DATE: February 02, 2006

THE COUNTRY CODE AND NUMBER OF YOUR PRIORITY APPLICATION, TO BE USED FOR FILING ABROAD UNDER THE PARIS CONVENTION, IS US60/764,450

**By Authority of the
Under Secretary of Commerce for Intellectual Property
and Director of the United States Patent and Trademark Office**



**M. SIAS
Certifying Officer**

Doc Code:

PTO/SB/18 (10-05)

Approved for use through 07/31/2008. OMB 0881-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PROVISIONAL APPLICATION FOR PATENT COVER SHEET - Page 1 of 2

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

Express Mail Label No. EL867444808US**INVENTOR(S)**

Given Name (first and middle [if any])	Family Name or Surname	Residence (City and either State or Foreign Country)
Julio F.	Rodriguez	Collinsville, Tennessee
Allen L.	Malloy	Elmira, New York
Charles E.	Thomas	Athens, Pennsylvania

☐ Additional inventors are being named on the _____ separately numbered sheets attached hereto**TITLE OF THE INVENTION (800 characters max)**

COAXIAL CABLE CONNECTOR WITH IMPROVED FRICTION-FIT SLEEVE

Direct all correspondence to:

CORRESPONDENCE ADDRESS☒ The address corresponding to Customer Number:

45740

OR

☐ Firm or
Individual Name

Address

City

State

ZIP

Country

Telephone

Email

ENCLOSED APPLICATION PARTS (check all that apply)☐ Application Data Sheet. See 37 CFR 1.76☐ CD(s), Number of CDs _____☒ Specification Number of Pages 17☐ Other (specify) _____☒ Drawing(s) Number of Sheets 7Total # of sheets 24Application Size Fee \$0.00

Fees Due: Filing Fee of \$200. If the specification and drawings exceed 100 sheets of paper, an application size fee is also due, which is \$250 for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(e).

METHOD OF PAYMENT OF THE FILING FEE AND APPLICATION SIZE FEE FOR THIS PROVISIONAL APPLICATION FOR PATENT☐ A check or money order is enclosed to cover the filing fee and application size fee (if applicable).

\$200.00

☐ Payment by credit card. Form PTO-2038 is attached.

TOTAL FEE AMOUNT (\$)

☒ The Director is hereby authorized to charge filing fee and application size fee (if applicable) or credit any overpayment to
Account Number: 20-0775 A duplicative copy of this form is enclosed for fee processing.**USE ONLY FOR FILING A PROVISIONAL APPLICATION FOR PATENT**

This collection of information is required by 37 CFR 1.81. 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 6 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. SEND TO: Commissioner for Patents, P.O. Box 1480, Alexandria, VA 22313-1480.

If you need assistance in completing the form, call 1-800-PTO-8198 and select option 2.

EXPRESS MAIL CERTIFICATEDate: 2/10/06 Label No. EL867444808US
I hereby certify that the data indicated above, I deposited and paid or for
with the U.S. Postal Service and that it was addressed for delivery to the
Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 by "Express
MAIL, Post Office to Addressee" Service.m. Elgort M. J. Hargis
(Postmaster) (Signature)

P18LARGE/REV08

Doc Code:

PROVISIONAL APPLICATION COVER SHEET

Page 2 of 2

PTO/BB/16 (10-05)

Approved for use through 07/31/2008. OMB 0841-0032

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

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



No.



Yes, the name of the U.S. Government agency and the Government contract number are: _____

WARNING:

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

SIGNATURE



Date

February 2, 2008

TYPED or PRINTED NAME

Steven T. Zuschlag

REGISTRATION NO.
(if appropriate)

43,308

TELEPHONE

(516) 822-3550

Docket Number:

577-778P

**COAXIAL CABLE CONNECTOR WITH IMPROVED
FRICTION-FIT SLEEVE**

5

FIELD OF THE INVENTION

The present invention relates generally to connectors for terminating coaxial cable. More particularly, the present invention relates to a coaxial cable connector providing an attachment method relying on frictional forces and enhanced cable locking methods to reduce the cost of manufacturing the connector components and to improve mechanical and electrical performance of the connector.

10

BACKGROUND OF THE INVENTION

It has long been known to use connectors to terminate coaxial cable so as to connect a cable to various electronic devices such as televisions, radios and the like. Conventional coaxial cables typically include a center conductor surrounded by an insulator. A conductive foil is disposed over the insulator and a braided conductive shield surrounds the foil covered insulator. An outer insulative jacket surrounds the shield. In order to prepare the coaxial cable for termination, the outer jacket is stripped back exposing an extent of the braided conductive shield which is folded back over the jacket. A portion of the insulator covered by the conductive foil extends outwardly from the jacket and an extent of the center conductor extends outwardly from within the insulator. Such a prepared cable may be terminated in a conventional coaxial connector.

15

20

25

30

Prior art coaxial connectors generally include a connector body having an annular collar for accommodating a coaxial cable, an annular nut rotatably coupled to the collar for providing mechanical attachment of the connector to an external device and an annular post interposed between the collar and the nut. Upon assembly to a coaxial cable, the annular post is inserted between the foil covered insulator and the conductive shield of the cable. A resilient sealing O-ring may also be positioned between the collar and the nut at the rotatable juncture thereof to provide a water resistant seal thereat. The collar includes a cable receiving end for insertably

receiving an inserted coaxial cable and, at the opposite end of the connector body, the nut includes an internally threaded end extent permitting screw threaded attachment of the body to an external device.

5 This type of coaxial connector further includes a locking sleeve to secure the cable to the connector body of the coaxial connector. The locking sleeve, which is typically formed of a resilient plastic, is securable to the connector body to secure the coaxial connector thereto. In this regard, the connector body typically includes some form of structure to cooperatively engage the locking sleeve.. Such structure may include one or more recesses or detents formed on an inner annular surface of the
10 connector body, which engages cooperating structure formed on an outer surface of the sleeve. A coaxial cable connector of this type is shown and described in commonly owned U.S. Patent No. 6,530,807.

Such coaxial connectors are generally manufactured in large quantities at relatively low costs. Two cost factors in manufacturing these connectors are the
15 complexity and the material of the individual connector components that are required for assembly. For example, it is desirable from a cost perspective to manufacture the connector components from plastic. However, molding complex structural features, such as engagement recesses and detents, into the internal diameter of the connector body are not practical, because such features hamper the opening of the mold.
20 Methods to circumvent this mold limitation are also costly.

It is, therefore, desirable to provide a coaxial connector having simply designed and easily manufactured components. In particular, it would be desirable to provide a coaxial connector that eliminates the need for molding complex engagement structure into the inner annular surface of the connector body.

25 OBJECTS AND SUMMARY OF THE INVENTION

It is an object of the present invention to provide a coaxial cable connector for terminating a coaxial cable.

115

It is a further object of the present invention to provide a coaxial cable connector having simpler components and, therefore, a lower manufacturing cost.

5 In the efficient attainment of these and other objects, the present invention provides a coaxial cable connector. The connector of the present invention generally includes an annular post defining an axial bore therein, a cylindrical connector body coupled to the post, a nut rotatably coupled to the post and a sleeve movably connected to the connector body. The sleeve includes at least one radially outwardly extending ridge formed on an outer surface thereof, which frictionally engages an inner surface of the connector body. As a result, the inner surface of the connector
10 body does not require a recess or other engagement structure formed thereon.

In a preferred embodiment, the sleeve and connector body are made of plastic and the sleeve includes a plurality of raised ridges formed thereon. Each ridge is further preferably defined by a rearwardly facing perpendicular wall and a forwardly facing chamfered wall.

15 The ridges may be divided into two axially spaced forward ridges and two axially spaced rearward ridges. The forward ridges have a first diameter and the rearward ridges have a second diameter that is slightly larger than the first diameter so that a greater holding force is provided by the interference-fit upon full insertion of the sleeve into the body. A rearward-most locking ridge and an abutment surface may
20 also be provided adjacent a flanged head portion of the sleeve to enhance locking of the sleeve into the connector body.

The forward end of the sleeve is further preferably formed with a plurality of flexible fingers extending in the forward direction for gripping a cable inserted into the connector. The fingers are forced to deflect radially inwardly by an internal ramp
25 portion of the connector body during insertion of the sleeve into the body.

To further enhance gripping of the cable, the coaxial cable connector of the present invention preferably includes a connector body having a rearward sleeve receiving end, an annular post disposed within the connector body and an axially movable locking sleeve seated in the rearward sleeve receiving end of the connector

body. The post has a radially outwardly projecting barb disposed at a rearward end thereof and the locking sleeve has an inwardly directed shoulder portion, which is positioned axially forward of the post barb when the sleeve is moved to a forward most locking position in the connector body.

5 An annular chamber is thus formed between the post barb and the inwardly directed shoulder portion of the sleeve. The annular chamber has a forward boundary defined by the sleeve shoulder portion and a rearward boundary defined by the post barb.

10 The post further preferably includes a second radially outwardly projecting barb disposed forward of the first barb. The shoulder portion of the sleeve is then axially positioned between the first and second post barbs when the sleeve is moved to the forward most locking position.

15 The post further preferably includes a flanged base portion disposed at a forward end thereof and a radially outwardly protruding connector body locking barb disposed between the forward base portion and the rearward end barb. The locking barb engages an inner surface of the connector body to secure the post to the body. In this regard, the connector body preferably includes a recess formed in its inner surface for lockingly receiving the post locking barb.

20 A preferred form of the coaxial connector, as well as other embodiments, objects, features and advantages of this invention, will be apparent from the following detailed description of illustrative embodiments thereof, which is to be read in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

25 Figure 1 is a cross-sectional view of the coaxial cable connector of the present invention in an open position.

 Figure 2 is a cross-sectional view of the connector shown in Figure 1 in a closed position with a cable secured thereto.

Figures 3A and 3B are perspective views of the sleeve component of the coaxial cable connector of the present invention.

Figure 4 is a cross-sectional view of a preferred embodiment of the coaxial cable connector of the present invention in a closed position.

5 Figure 5 is a cross-sectional view of the connector shown in Figure 4 in an open position with a cable secured thereto.

Figure 6 is a cross-sectional view of the connector shown in Figure 4 in a closed position with a cable secured thereto.

Figure 7 is an exploded perspective view of the connector shown in Figure 4.

10 DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The present invention is directed to connectors for terminating coaxial cable. Coaxial connectors of this type are shown and described in commonly owned U.S. Patent No. 6,530,807 issued August 28, 2003, the disclosure of which is incorporated herein by reference.

15 Referring to Figures 1 and 2, the coaxial cable connector 10 of the present invention is shown. The connector 10 generally includes four components: a connector body 12 (sometimes referred to as a "collar"); an annular post 14; a rotatable nut 16; and a movable locking sleeve 18. It is however conceivable that the connector body 12 and the post 14 can be integrated into one component and/or
20 another fastening device other than the rotatable nut 16 can be utilized. Also, as will be discussed in further detail below, a resilient sealing O-ring 34 may be positioned between the body 12, the post 14 and the nut 16 at the rotatable juncture thereof to provide a water resistant seal thereat.

25 The connector body 12 is an elongate generally cylindrical member, which is preferably made from plastic to minimize cost. Alternatively, the body 12 may be made from metal or the like. The body 12 has one end 20 coupled to the post 14 and the nut 16 and an opposite sleeve receiving end 22 for insertably receiving the sleeve

18. The sleeve receiving end 23 defines an inner engagement surface 23 for frictionally engaging the sleeve 18, as will be described in further detail below.

5 The annular post 14 includes a flanged base portion 24, which is rotatably seated in a post receiving space in the nut 16, and a widened shoulder portion 25, which provides for press-fit securement of the post within the collar 12. The annular post 14 further includes an annular tubular extension 26 extending rearward within the body 12 and into the sleeve 18. The rearward end of the tubular extension 26 preferably includes a radially outwardly extending ramped flange portion or "barb" 28 having a forward facing edge 29 for compressing the outer jacket of the coaxial cable against the internal diameter of the body to secure the cable within the connector. 10 Alternatively, and/or depending on the method of forming the post 14, the barb 28 may be more rounded as opposed to having a sharp edge 29. In any event, as will be described in further detail hereinbelow, the extension 26 of the post 14, the body 12 and the sleeve 18 define an annular chamber 30 for accommodating the jacket and shield of the inserted coaxial cable. 15

The nut 16 may be in any form, such as a hex nut, knurled nut, wing nut, or any other known attaching means, and is rotatably coupled to the post 14 for providing mechanical attachment of the connector 10 to an external device. The nut 16 includes an internally threaded end extent 32 permitting screw threaded attachment of the connector 10 to the external device. The sleeve 18 and the internally threaded end extension 32 define opposite ends of the connector 10. A resilient sealing O-ring 34 may be positioned between the body 12, the post 14 and the nut 16 at the rotatable juncture thereof to provide a water resistant seal thereat. 20

Referring additionally to Figures 3A and 3B, the locking sleeve 18 is a generally tubular member having a rearward cable receiving end 36 and an opposite forward connector insertion end 38, which is movably coupled to the inner surface 23 of the connector body 12. As will be described in further detail hereinbelow, the outer cylindrical surface of the sleeve 18 includes a plurality of ridges or projections 40, which allows for the movable connection of the sleeve 18 to the connector body 12 such that the sleeve is axially moveable along arrow A of Figures 1 and 2, towards 25 30

nut 16 from a first position shown in Figure 1, which loosely retains a cable 60 within the connector 10, to a more forward second position shown in Figure 2, which secures the cable within the connector.

Specifically, formed on the outer cylindrical surface of the sleeve 18, between the rearward cable receiving end 36 and the forward insertion end 38 is at least one radially outwardly extending ridge or projection 40. Preferably, there are a plurality of ridges 40 to increase the gripping force between the sleeve 18 and the inner surface 23 of the collar 12. Each ridge 40 is further preferably defined by a rearwardly facing perpendicular wall 44 and a forwardly facing chamfered wall 46. This structure facilitates forward insertion of the sleeve 18 into the body 12 in the direction of arrow A and resists rearward removal of the sleeve from the body.

In a preferred embodiment, the sleeve 18 includes two axially spaced forward ridges 40a having a first diameter and two axially spaced rearward ridges having a second diameter which is slightly larger than the first diameter. The first diameter of the forward ridges 40a is slightly larger than the inner diameter of the sleeve receiving end 22 of the body 12 so that an interference-fit is provided upon insertion of the sleeve 18 into the body in the first position, as shown in Figure 1. The first diameter of the two forward ridges 40a that are inside and engaging the inner surface 23 of the body 12 in the first position causes an interference fit to hold the sleeve 18 in place during transportation and yet allows manual removal and reinsertion of the sleeve if necessary for installation. The second diameter of the two rearward ridges 40b is slightly larger than the first diameter of the forward ridges 40a. This helps prevent the sleeve from being inadvertently pushed inside the collar prematurely and provides an interference fit between the sleeve 18 and the body 12 with a greater holding force when the sleeve is in its closed position.

Moreover, the ridges or projections 40 of the present invention may take other forms. For example, while each ridge 40 is shown in the drawings to be continuous about the circumference of the locking sleeve 18, it is conceivable to provide gaps or spaces in one or more ridges to increase the ridge's flexibility. Also, it is possible to design one ridge in a manner which makes it more or less flexible than another ridge.

no

The locking sleeve 18 further preferably includes a flanged head portion 48 disposed at the rearward cable receiving end 36 thereof. The head portion 48 has an outer diameter larger than the inner diameter of the body 12 and includes a forward facing perpendicular wall 50, which serves as an abutment surface against which the rearward end of the body 12 stops to prevent further insertion of the sleeve 18 into the body 12. A rearward most locking ridge 40c having a forward facing chamfered wall 46 may also be provided adjacent the head portion 48 for providing additional gripping strength between the sleeve 18 and the body 12.

The forward end 38 of the sleeve 18 is further preferably formed with a plurality of flexible fingers 52 extending in the forward direction. As will be discussed in further detail below, these fingers 52 are forced to deflect radially inwardly by an internal ramp portion 54 of the connector body 12 during insertion of the sleeve 18 into the body. As the fingers 52 are deflected inward, they engage the outer jacket of the cable 60 to enhance the gripping of the cable within the connector 10. The fingers 52 may be formed simply by providing longitudinal slots or recesses at the forward end of the sleeve 18. A lateral groove (not shown) may also be provided to increase flexibility of the fingers 52.

Furthermore, the fingers 52 may include a tapered end 53 so as to form a relatively sharp edge. The sharp edge 53 would tend to bite into the cable 60 upon deflection of the fingers 52 by the internal ramp portion 54 of the connector body 12 to provide even greater gripping force and prevent the cable from being pulled out of the connector.

The connector 10 of the present invention is constructed so as to be supplied in the assembled condition shown in Figure 1, wherein the forward ridges 40a of the sleeve 18 engage the inner surface of the body 12 to secure the sleeve in its first position. In such assembled condition, and as will be described in further detail hereinbelow, a coaxial cable 60 may be inserted through the rearward cable receiving end 36 of the sleeve 18. The sleeve 18 may then be moved from the first position loosely retaining the cable to the second position which is axially forward thereby locking the cable within the connector.

121

It is however contemplated that the sleeve 18 may be provided separately from the rest of the connector 10, which, in a manner which will be described in further detail hereinbelow, will allow the coaxial cable 60 to be first inserted directly into the post 14 unobstructed by the sleeve 18. Thereafter, the sleeve 18, which has been
5 earlier placed around the cable 60, may be attached to the connector body 12 where it can be moved from the first position to the second position locking the cable within the connector.

Having described the components of the connector 10 in detail, the use of the connector in terminating a coaxial cable may now be described with respect to Figure
10 2. Coaxial cable 60 includes an inner conductor 62 formed of copper or similar conductive material. Extending around the inner conductor 62 is an insulator 64 formed of a suitably insulative plastic. A metallic foil 66 is disposed over the insulator 64 and a metallic shield 68 is positioned in surrounding relationship around the foil covered insulator. Covering the metallic shield 68 is an outer insulative jacket
15 70.

Cable 60 is prepared in conventional fashion for termination by stripping back the jacket 70 exposing an extent of shield 68. A portion of the foil covered insulator 64 extends therefrom with an extent of conductor 62 extending from insulator 64. After an end extent of shield 68 is folded back about jacket 70, the cable 60 may be
20 inserted into the connector 10 with the sleeve 18 already coupled to the body 12, as shown in Figure 1. In this technique, the prepared cable 60 is inserted through the rearward end 36 of the sleeve 18 and the extension 26 of the post 14 is inserted between the foil covered insulator 64 and the metallic shield 68 such that the shield and the jacket 70 reside within the annular region 30 defined between the post 14 and
25 the sleeve 18. When the sleeve 18 is coupled to the body 12 in the first position, as shown in Figure 1, sufficient clearance is provided between the sleeve and the post 14 so that the tubular post extension 26 may be easily interposed between the insulator 64 and the shield 68 of the cable 60.

Once the cable 60 is properly inserted, the sleeve 18 may be moved axially
30 forward in the direction of arrow A from the first position shown in Figure 1, to the

second position shown in Figure 2. When the sleeve 18 is moved axially forward, the larger diameter rearward ridges 40b formed on the outer surface of the sleeve frictionally engage the inner surface of the body 12 to secure the sleeve within the body. Such movement is facilitated by the forward facing chamfered walls 46 of the ridges 40. The sleeve 18 is moved axially forward until the forward facing abutment surface 50 of the sleeve head portion 48 engages the rearward end of the body 12. A suitable compression tool may be used to effect movement of the sleeve 18 from its first position to its second position securing the cable 60 to the connector 10.

In certain installation settings, the installer may not have clear and convenient access when terminating the cable 60. Therefore, it may be difficult for the installer to blindly insert the cable 60 through the cable receiving end 36 of the sleeve 18 while connected to the connector body 12. In such situations, the present invention contemplates the ability to detachably remove the sleeve 18 from the body 12 so that the cable 60 may be directly connected to the tubular extension 26 of the post 14.

In these situations, the sleeve 18 is detachably removed from the body 12 in a manner facilitated as above described. The sleeve 18 is then slipped over the cable 60 and moved to a convenient position along the cable length. The end of the foil covered insulator 64 may then be inserted directly into the post extension 26 so that the extension is interposed between the foil covered insulator 64 and the shield 68. Thereafter, the sleeve 18 may be brought up along the cable 60 and the forward insertion end 38 of the sleeve may be inserted into the sleeve receiving end 22 of the body 12. Thereafter, as described above, the sleeve 18 may be moved from the first position shown in Figure 1 to its second position shown in Figure 2.

In either case, as the sleeve 18 moves to this second position, the jacket 70 and shield 68 of the cable 60 begins to become compressively clamped within the annular region 30 between the barb 28 of the post 14 and the inner surface of the sleeve 18. In this regard, the inner surface of the sleeve 18 is preferably provided with an inwardly directed shoulder portion 49 to facilitate compression of the cable jacket 70 against the barb 28 of the post 14. Also, as the sleeve 18 moves to its second position, the

sleeve fingers 52 are urged inwardly by the ramp 54 formed in the connector body to further engage the cable jacket 70.

5 When the sleeve 18 is in its second, closed position, as shown in Figure 2, all of the ridges 40 are frictionally engaged with the inner surface of the connector body 12 to prevent the sleeve from being easily removed from the assembly 10. Secondly, these ridges 40 provide redundant sealing points to prevent the ingress of water or other contaminants into the connector assembly 10. This feature eliminates the use of a separate o-ring and further reduces the manufacturing costs of the connector.

10 To further enhance locking of the cable 60, the connector 10a of the present invention is preferably provided with additional cable gripping features, as shown in Figures 4-7. In particular, the locking sleeve 18a of the connector 10a shown in Figures 4-7 includes an inwardly directed shoulder portion 49a, which has been moved forward as compared to that shown in Figures 1 and 2. More specifically, the inwardly directed shoulder portion 49a of the sleeve 18a shown in Figures 4-7 is
15 positioned forward of the post barb 28 when the sleeve is in its closed position, instead of being aligned with the barb.

As a result, an annular chamber 72 is formed between the post barb and the inwardly directed shoulder portion 49a of the sleeve 18a for accommodating the jacket and shield of the inserted coaxial cable. This forward placement of the
20 shoulder portion 49a with respect to the post barb 28 facilitates compressive clamping of the cable and prevents rearward movement of the cable. This arrangement also helps to lock the sleeve 18a in its forward closed position, thereby preventing the sleeve from creeping out of the collar 12a. Particularly, any rearward movement of the sleeve 18a will only cause the inwardly directed shoulder portion 49a to further
25 compress the cable against the sharp edge 29 of the post barb 28 to halt further movement.

In the preferred embodiment, the post 14a further includes a second annular cable retention barb 74 disposed forward of the rearward end barb 28. When the locking sleeve 18a is in its closed position, the inwardly directed shoulder portion 49a

of the sleeve thus falls between the end barb 28 and the second barb 74. Like the first barb 28, the second barb 74 is generally an annular, radially outwardly extending, ramped flange portion of the post 14a having a forward facing edge 75 for compressing the outer jacket of the coaxial cable to secure the cable within the connector 10a. The second barb 74 improves both the mechanical retention of the cable as well as the electromagnetic isolation or shielding of the signal inside the connector.

A third barb 76, which can be termed a connector body locking barb, is also preferably provided on the post 14a to help secure the post to the connector body 12a. The locking barb 76 is positioned on the post 14a between the rearward end barb 28 and the forward flanged base portion 24. Again, the locking barb 76 is generally an annular, radially outwardly extending ramped flange portion of the post 14a having a forward facing edge 77. In this case, however, the edge 77 of the locking barb 76 engages the connector body 12a to prevent any forward axial movement of the post 14a with respect to the connector body 12a. The connector body 12a preferably includes an annular recess 78 formed in its inner diametrical surface for receiving the locking barb 76. The recess 78 includes a rearward facing wall 80 for engaging the edge 77 of the barb 76 to prevent forward axial movement of the post 14a and to thereby lock the post to the collar 12a.

Such arrangement is desirable since the plastic material of the collar 12a and post 14a limits the strength of the interference fit therebetween. The third barb 76 is located just outside the press-fit area to assure adequate concentric alignment of the post 14a and collar 12a. The ramped portion of the barb 76 also facilitates easy rearward insertion of the post 14a into the collar 12a.

Also shown in Figures 4-7 is an alternative embodiment of the friction fit projections 40 provided on the sleeve 18a. In particular, the sleeve 18a shown in Figures 4-7 includes projections 40d which have been lengthened in the axial direction to increase the contact surface area between the projection and the inner engagement surface 23 of the connector body 12a. The increased contact surface area

125

of the projections 40d also reduces stress on the plastic material by spreading the compression force over a wider area.

5 Thus, as a result of the present invention, a plastic connector body 12 can be utilized without the need for molding engagement structure into the inner surface of the body. Instead, the present invention provides an attachment method of the sleeve
10 18 to the body 12 that relies on frictional forces. Moreover, in the installed condition, the cable 60 is prevented from being easily pulled out of the connector by three points of pressure: a) the ridges 40 frictionally engaged against the inner surface of the body 12; b) the deflected fingers 52 exerting pressure on the cable caused by the inner
15 slanted surface 54 of the body; and c) the cable jacket being compressed between the post barb 28 and the inner surface 49 of the sleeve 18.

Although the illustrative embodiments of the present invention have been described herein with reference to the accompanying drawings, it is to be understood that the invention is not limited to those precise embodiments, and that various other
15 changes and modifications may be effected therein by one skilled in the art without departing from the scope or spirit of the invention.

Various changes to the foregoing described and shown structures will now be evident to those skilled in the art. Accordingly, the particularly disclosed scope of the invention is set forth in the following claims.

What is Claimed is:

1. A coaxial cable connector comprising:
 a connector body made from a plastic material and having a sleeve
 5 receiving end defining an inner engagement surface; and
 a locking sleeve having at least one projection formed on an outer
 surface thereof for frictionally engaging said inner engagement surface of said
 connector body when said locking sleeve is moved from a first position to a second
 10 position.
2. A coaxial cable connector as defined in Claim 1, further comprising:
 an annular post disposed within said connector body; and
 a nut rotatably coupled to said post.
3. A coaxial cable connector as defined in Claim 1, wherein said sleeve is
 15 made from a plastic material.
4. A coaxial cable connector as defined in Claim 1, wherein said locking
 sleeve includes a rearward cable receiving end and an opposite forward connector
 20 insertion end, said forward connector insertion end being formed with at least one
 flexible finger for gripping a cable inserted in said sleeve.
5. A coaxial cable connector as defined in Claim 1, wherein said locking
 sleeve includes a forward projection defining a first sleeve diameter and a rearward
 25 projection defining a second sleeve diameter, said second sleeve diameter being larger
 than said first sleeve diameter.

6. A coaxial cable connector comprising:
 a connector body having a rearward sleeve receiving end;
 an annular post disposed within said connector body, said post having
 a radially outwardly projecting barb disposed at a rearward end thereof; and
 an axially movable locking sleeve seated in said rearward sleeve
 receiving end of said connector body, said locking sleeve having an inwardly directed
 shoulder portion, said shoulder portion being positioned axially forward of said post
 barb when said sleeve is moved to a forward most locking position in said connector
 body.

7. A coaxial cable connector as defined in Claim 6, wherein an annular
 chamber is formed between said post barb and said inwardly directed shoulder portion
 of said sleeve, said annular chamber having a forward boundary defined by said
 sleeve shoulder portion and a rearward boundary defined by said post barb.

8. A coaxial cable connector as defined in Claim 6, wherein said post
 further includes a second radially outwardly projecting barb disposed forward of said
 first barb, said shoulder portion of said sleeve being axially positioned between said
 first and second post barbs when said sleeve is moved to said forward most locking
 position.

9. A coaxial cable connector as defined in Claim 6, wherein said post
 further includes a flanged base portion disposed at a forward end thereof and a
 radially outwardly protruding connector body locking barb disposed between said
 forward base portion and said rearward end barb, said locking barb engaging an inner
 surface of said connector body to secure said post to said body.

10. A coaxial cable connector as defined in Claim 9, wherein said
 connector body includes a recess formed in said inner surface for lockingly receiving
 said locking barb.

128

11. A coaxial cable connector comprising:
a connector body having a rearward sleeve receiving end;
an axially movable locking sleeve seated in said rearward sleeve
receiving end of said connector body; and

5 an annular post disposed within said connector body, said post having
a first radially outwardly projecting barb disposed at a rearward end thereof and a
second radially outwardly projecting barb disposed forward of said first barb.

10 12. A coaxial cable connector as defined in Claim 11, wherein said post
further includes a flanged base portion disposed at a forward end thereof and a
radially outwardly protruding connector body locking barb disposed between said
forward base portion and said rearward end barb, said locking barb engaging an inner
surface of said connector body to secure said post to said body.

15 13. A coaxial cable connector as defined in Claim 12 wherein said
connector body includes a recess formed in said inner surface for lockingly receiving
said locking barb.

20 14. A coaxial cable connector comprising:
a connector body having a rearward sleeve receiving end;
an axially movable locking sleeve seated in said rearward sleeve
receiving end of said connector body; and
25 an annular post disposed within said connector body, said post having
a radially outwardly projecting barb disposed at a rearward end thereof, a flanged base
portion disposed at a forward end thereof and a radially outwardly protruding
connector body locking barb disposed between said forward base portion and said
rearward end barb, said locking barb engaging an inner surface of said connector body
to secure said post to said body.

129

15. A coaxial cable connector as defined in Claim 14, wherein said connector body includes a recess formed in said inner surface for lockingly receiving said locking barb.

FIG. 2.

10
↘

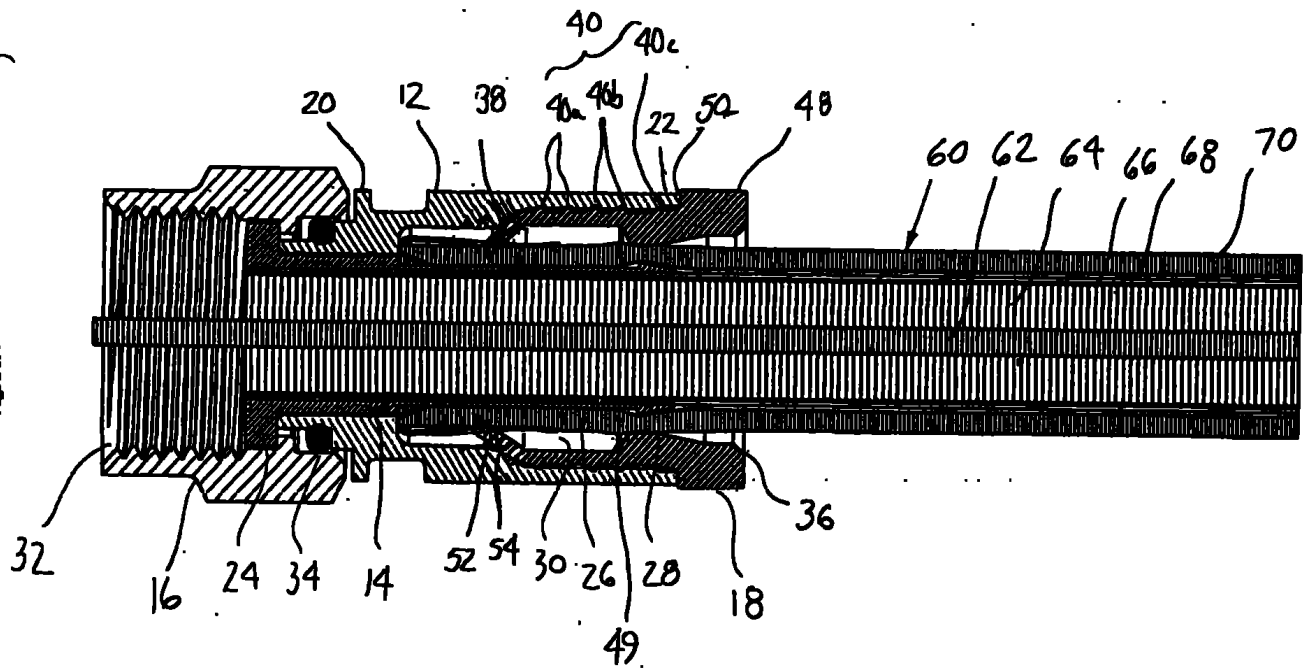


FIG. 3A

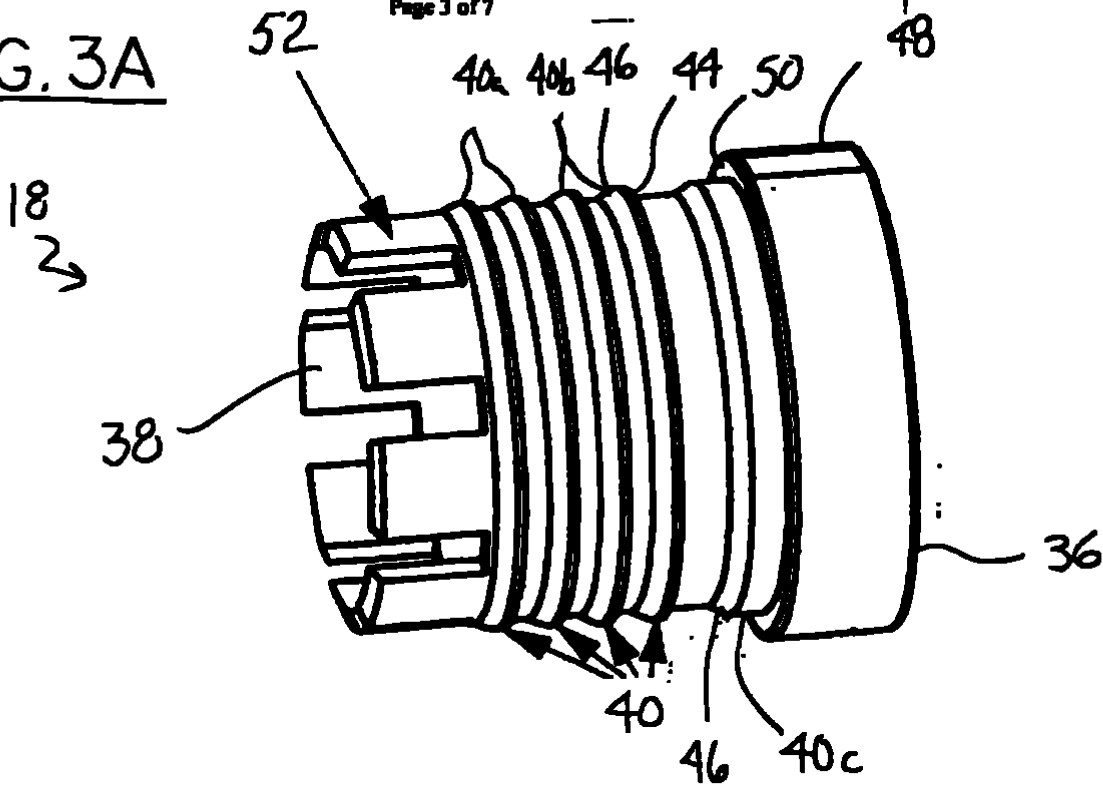
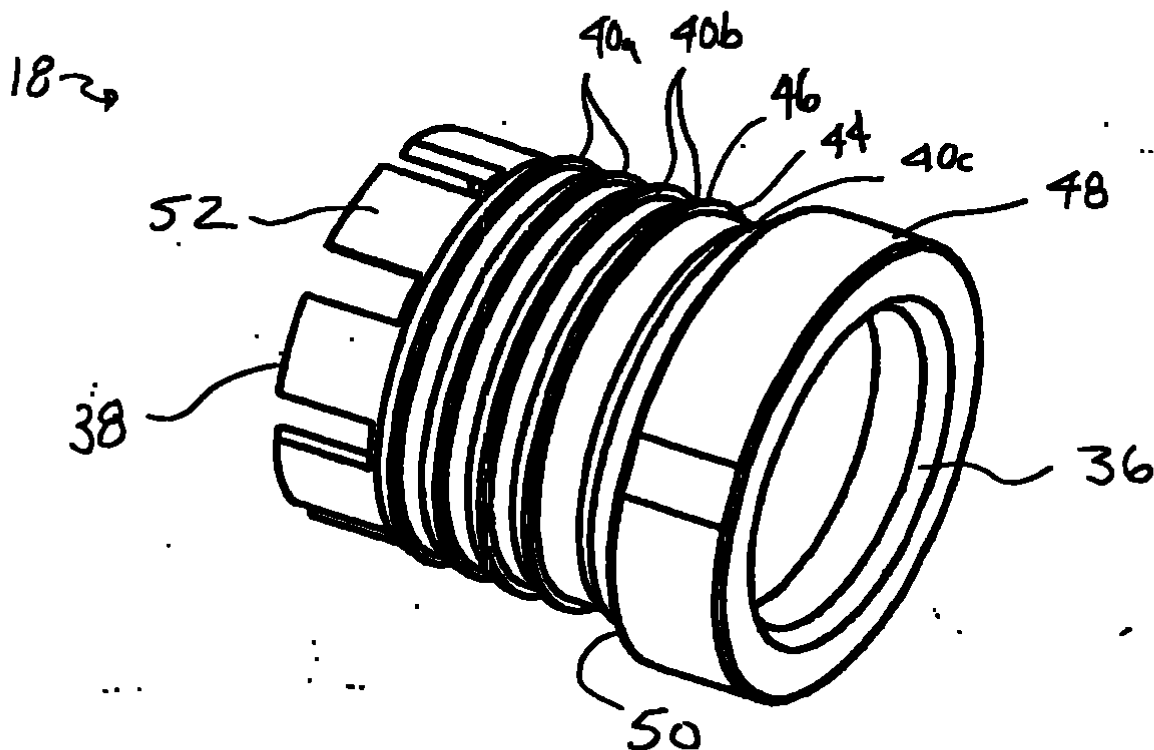


FIG. 3B



BEST AVAILABLE COPY

BEST AVAILABLE COPY

FIG 4

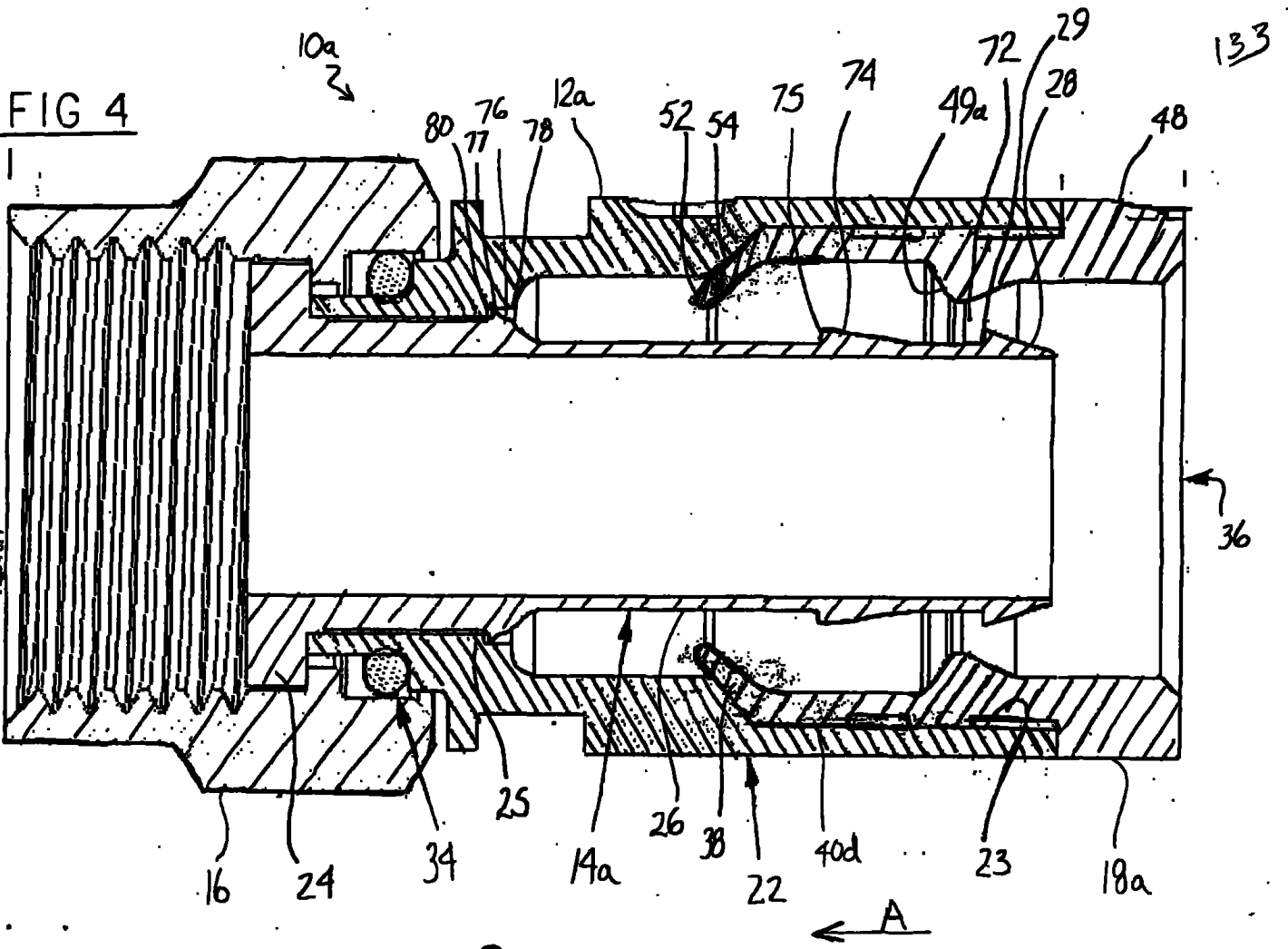
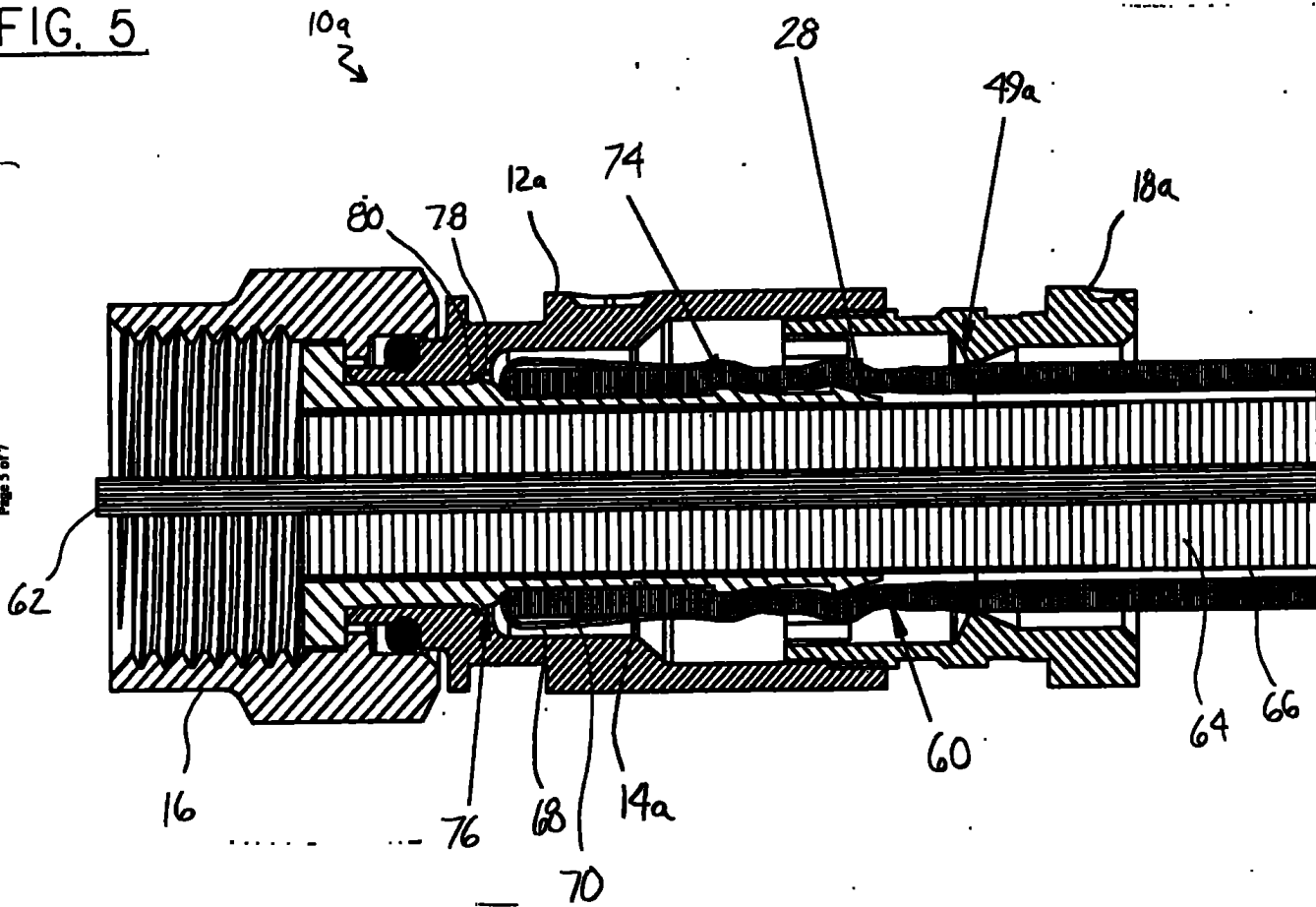


FIG. 5

10a
2

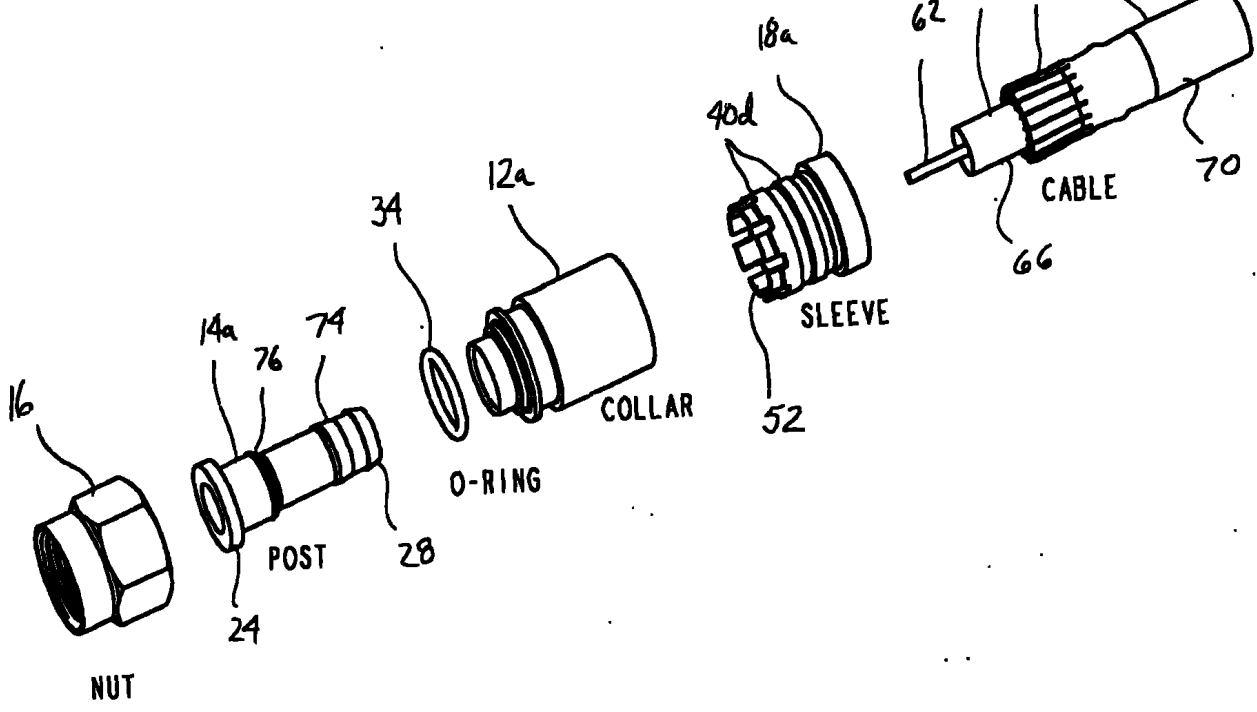


136

FIG. 7

10a
2

Express Mail No.: EL86744469US
Applicant: Rediqua et al.
Title: Central Cable Connector with Improved
Friction-Fit Sleeve
Our DocId: 577-778P
Page 7 of 7



137



LOS ESTADOS UNIDOS DE AMERICA

A TODO AQUEL A QUIEN CONCIERNA LO PRESENTE
DEPARTAMENTO DE COMERCIO DE LOS ESTADOS UNIDOS
Oficina de Patentes y Marcas de los Estados Unidos

Mayo 02, 2006

LA PRESENTE ES PARA CERTIFICAR QUE ADJUNTA A LA MISMA HAY
UNA COPIA FIEL DE LOS REGISTROS DE LA OFICINA DE PATENTES Y
MARCAS DE LOS ESTADOS UNIDOS DE LOS DOCUMENTOS DE LA
SOLICITUD DE PATENTE IDENTIFICADA EN LO QUE SIGUE, QUE
CUMPLEN LOS REQUISITOS PARA OTORGARLE UNA FECHA DE
PRESENTACIÓN BAJO 35 USC 111.

NÚMERO DE SOLICITUD: 60/764,450
FECHA DE PRESENTACIÓN: Febrero 02, 2006

EL CÓDIGO DE PAÍS Y NÚMERO DE SU SOLICITUD DE
PRIORIDAD, PARA SER USADA PARA PRESENTACIÓN EN EL
EXTRANJERO DE ACUERDO CON LA CONVENCION DE PARIS, ES
US60/764,450



Por la Autoridad del
De acuerdo con la Secretaría de Comercio para la
Propiedad Intelectual y Director de la Oficina de Marcas
y Patentes de los Estados Unidos

(Aparece firma ilegible)
M. SIAS
Funcionario Certificador

B. A. / S.
GEORGE EUGENIA ALANON GUTIERREZ
TRADUCTORA E INTERPRETE OFICIAL
RESOLUCION 2612 DE SEPT. 15/03 MANAGUA

Código Doc:

PTO/SB/16 (10-05)

Aprobado para uso hasta 07/31/2006. OMB 0651-0032

Oficina de Marcas y Patentes de los Estados Unidos;

DEPARTAMENTO DE COMERCIO DE LOS ESTADOS UNIDOS

De acuerdo con el acta de reducción de papeleo de 1995, no se requiere que ninguna persona responda para una recolección de información a menos que este muestre un número de control OMB válido.

HOJA DE PORTADA PARA SOLICITUD PROVISIONAL PARA PATENTE

Esta es una petición para presentar una SOLICITUD PROVISIONAL PARA PATENTE de acuerdo con el 37 CFR 1,53(c).

Etiqueta de Correo Expreso No. EL867444606US

INVENTOR(ES)		
Nombre (Primero y otro si tiene)	Nombre de familia o apellido	Residencia (Ciudad y Estado o país extranjero)
Julio F.	Rodrigues	Collierville, Tennessee
Allen L.	Malloy	Elmira, New York
Charles E.	Thomas	Athens, Pennsylvania

☐ Inventores adicionales que se mencionan en las _____ hojas numeradas en forma separada adjuntas a esta

TÍTULO DE LA INVENCION (500 Caracteres Máximo)

CONECTOR DE CABLE COAXIAL CON MANGUITO DE AJUSTE POR FRICCIÓN MEJORADO

Dirigir toda la correspondencia a:

Dirección de Correspondencia

☒ la dirección que corresponde al Número de Cliente 45740

o

☐ Firma o Nombre de

139

individuo

Dirección

Ciudad

Estado

Zip

País

Teléfono

E-mail

Partes de la Solicitud Incluidas (marque todas las que apliquen)☐ Hoja de Datos de la Solicitud. Ver 37 CFR 1.76☒ Especificación *Número de páginas* 17☒ Dibujo(s) *Número de páginas* 7☐ CD(s), Número _____☐ Otro (especifique) _____Total # de Hojas **24** = Tarifa de tamaño de solicitud **\$0.00**

Tarifas Debidas: Tarifa de presentación de \$200. Si la especificación y dibujos exceden 100 hojas de papel, también se debe una tarifa de tamaño de solicitud, que es de \$250 para cada 50 hojas adicionales o fracción de éstos. Ver 35 U.S.C. 41(a)(1)(G) y 37 CFR 1.16(s)

MÉTODO DE PAGO DE TARIFAS DE PRESENTACIÓN PARA ESTA SOLICITUD PROVISIONAL PARA PATENTE☐ Se incluye cheque o giro para cubrir las tarifas de presentación y la tarifa de tamaño de solicitud (si aplica).☐ Pago por tarjeta de crédito.

Se adjunta forma PTO-2038

\$200.00**TOTAL CANTIDAD DE TARIFA**

☒ Por medio de la presente se autoriza al director a cargar las tarifas de presentación y tarifa de tamaño de solicitud (si aplica) o acreditar cualquier sobre pago al Número de Cuenta: 20-0776 . Se incluye una copia en duplicado de esta forma para procesamiento de tarifa.

USE SOLO PARA PRESENTAR UNA SOLICITUD PROVISIONAL PARA PATENTE

Esta recolección de información se requiere por el 37 CFR 1.51. Se requiere la información para obtener o retener un beneficio por el público que es

registrar (y mediante el USPTO para procesar) una solicitud. Regido confidencialmente por 35 U.S.C. 122 y 37 CFR 1.11 Y 1.14. Se estima que esta recolección toma 8 horas para completarse, e incluye reunir, preparar, y presentar el formulario de solicitud completo a la USPTO. El tiempo variará del caso individual. Cualquier comentario sobre la cantidad de tiempo que usted necesita para completar este formulario y/o sugerencias para reducir este límite, se debe enviar al Funcionario Jefe de Información, Oficina de Marcas y Patentes en los Estados Unidos, Departamento de Comercio de los Estados Unidos, P.O. Box 1450, Alexandria, VA 22313-1450. NO ENVIAR TARIFAS O FORMULARIO COMPLETOS A ESTA DIRECCIÓN. ENVIARLAS A: Comisionado para patentes, P.O. Box 1450, Alexandria, VA 22313-1450.

Si Usted necesita asistencia en la terminación de la forma, llame al 1-800-PTO-9199 y seleccione la opción 2.

P19LARGE/REV09

CERTIFICADO DE CORREO EXPRESO

Fecha: 2/2/06 Etiqueta No. EL867444809US

Por medio de la presente certifico que, he depositado este documento o la tarifa con el servicio postal de los Estados Unidos y que este está dirigido para suministro al comisionado para patentes P.O. Box 1450, Alexandria, VA 22313-1450 por el servicio "oficina postal CORREO EXPRESO al Destinatario".

(Aparece Nombre Ilegible)
(Nombre Impreso)

(Aparece firma)
(Firma)

Código Doc:

HOJA DE PORTADA DE SOLICITUD PROVISIONAL

PTO/SB/16 (10-05)

Aprobado para uso hasta 07/31/2006. OMB 0651-0032

Oficina de Marcas y Patentes de los Estados Unidos;

DEPARTAMENTO DE COMERCIO DE LOS ESTADOS UNIDOS

De acuerdo con el acta de reducción de papeleo de 1995, no se requiere que ninguna persona responda para una recolección de información a menos que este muestre un número de control OMB válido.

La invención fue hecha por una agencia del Gobierno de los Estados Unidos o bajo un contrato con una agencia del gobierno de los Estados Unidos.

141

☒ No.

☐ Si, el nombre de la agencia del Gobierno de Estados Unidos y número de contrato de Gobierno es: _____

ADVERTENCIA

Se advierte al peticionario/solicitante evitar presentar información adicional en documentos registrados en una solicitud de patente que pueda contribuir al robo de identidad tal información personal como números de seguro social, números de cuentas bancarias, o números de tarjetas de crédito (diferente de cheque o formulario de autorización de tarjeta de crédito PTO-2038 presentada para propósitos de pago) nunca es requerido por la USPTO para apoyar una petición o una solicitud. Si se incluye este tipo de información personal en documentos presentados a la USPTO los peticionarios/solicitantes deben considerar retirar tal información personal de los documentos antes de presentarlos a la USPTO. Se advierte al peticionario/solicitante que el registro de una solicitud de patente está disponible al público después de publicación de la solicitud (a menos que se haga una solicitud de no publicación de acuerdo con el 37 CFR 1.213(a) en la solicitud) o publicación de una patente. Adicionalmente, el registro de una solicitud abandonada también puede estar disponible al público si la solicitud se referencia en una solicitud publicada o una patente publicada (ver 37 CFR 1.14). Cheques y formularios de autorización de tarjeta de crédito PTO-2038 presentada para propósitos de pago no se retiene en el registro de solicitud y por lo tanto no están públicamente disponibles.

Firma (Aparece Firma Ilegible)

Fecha

Febrero 2, 2006Nombre escrito o impreso **Steven T. Zuschlag**No. REGISTRO 43,309
(si es apropiado)

TELÉFONO

(516) 822-3550

No. Registro

577-788P

Copia suministrada por USPTO de la IFW Image Database en 04/27/2006

GEATRIZ EUGENIA ALARCON GUTIERREZ
 TRADUCTORA E INTERPRETE OFICIAL
 REGISTRATION 3519 DE SEPT. 15/98 MINISTRO

REIVINDICACIONES:

1. Un conector de cable coaxial que comprende:

Un cuerpo conector hecho de un material plástico y que tiene un extremo receptor de manguito que define una superficie de acoplamiento interior; y

Un manguito de aseguramiento que tiene al menos una proyección formada sobre una superficie exterior de esta para acoplar friccionalmente dicha superficie de acoplamiento interior de dicho cuerpo conector cuando dicho manguito de aseguramiento se mueve desde una primera posición a una segunda posición

2. Un conector de cable coaxial como se definió en la reivindicación 1, que comprende además: un poste anular dispuesto dentro de dicho cuerpo conector; y

una tuerca rotablemente acoplada a dicho poste.

3. Un conector de cable coaxial como se definió en la reivindicación 1, en donde dicho manguito se hace de un material plástico.
4. Un conector de cable coaxial como se definió en la reivindicación 1, en donde dicho manguito de aseguramiento incluye un extremo receptor de cable trasero y un extremo de inserción conector delantero opuesto, dicho extremo de inserción conector delantero está formado con la

menos un dedo flexible para agarrar un cable insertado en dicho manguito.

5. Un conector de cable coaxial como se definió en la reivindicación 1, en donde dicho manguito de aseguramiento incluye una proyección delantera que define un primer diámetro de manguito y una proyección trasera que define un segundo diámetro de manguito, dicho segundo diámetro de manguito es más largo que dicho primer diámetro de manguito.
6. Un conector de cable coaxial que comprende:

Un cuerpo conector que tiene un extremo receptor de manguito trasero;

Un poste anular dispuesto dentro de dicho cuerpo conector, dicho poste tiene una arista que se proyecta radialmente hacia fuera dispuesta en un extremo trasero de este; y

Un manguito de aseguramiento axialmente movable sentando en dicho extremo receptor de manguito trasero de dicho cuerpo conector, dicho manguito de aseguramiento tiene una porción de hombro internamente dirigida, dicha porción de hombro está axialmente posicionada delante de dicha arista de poste cuando dicho manguito se mueve a una posición delantera de mas aseguramiento en dicho cuerpo conector.

124

7. Un conector de cable coaxial como se definió en la reivindicación 6, en donde se forma una cámara anular entre dicha arista de poste y dicha porción de hombro internamente dirigida de dicho manguito, dicha cámara anular que tiene un límite delantero definido por dicha porción de hombro de manguito y un límite trasero definido por dicha arista de poste.
8. Un conector de cable coaxial como se definió en la reivindicación 6, en donde dicho poste incluye además una segunda arista proyectante radialmente exterior dispuesta delante de dicha primer arista, dicha porción de hombro de dicho manguito están axialmente ubicados entre dicha primera y segunda arista de poste cuando dicho manguito se mueve a dicha posición delantera de mas aseguramiento.
9. Un conector de cable coaxial como se definió en la reivindicación 6, en donde dicho poste incluye además una porción de base rebordeada dispuesta en el extremo delantero de esta y una arista de aseguramiento de cuerpo conector sobresaliente radialmente hacia fuera dispuesta entre dicha porción de base delantera y dicha arista de extremo trasera, dicha arista de aseguramiento acopla una superficie interior de dicho cuerpo conector para asegurar dicho poste a dicho cuerpo.
10. Un conector de cable coaxial como se definió en la reivindicación 9, en donde dicho cuerpo conector incluye un nicho formado en dicha superficie interior para recibir de manera segura dicha arista de aseguramiento.

ias

11. Un conector de cable coaxial que comprende:

Un cuerpo conector que tiene un extremo receptor de manguito trasero;

Un manguito de aseguramiento axialmente movable sentado en dicho extremo receptor de manguito trasero de dicho cuerpo conector; y

Un poste anular dispuesto dentro de dicho cuerpo conector, dicho poste tiene una primera arista que se proyecta radialmente hacia fuera dispuesta en el extremo trasero de este y una arista que se proyecta radialmente hacia fuera dispuesta delante de dicha primer arista.

12. Un conector de cable coaxial como se definió en la reivindicación 11, en donde dicho poste incluye además una porción base rebordeada dispuesta en el extremo delantero de este y una arista de aseguramiento de cuerpo conector sobresaliente radialmente hacia fuera dispuesta entre dicha porción de base delantera y dicha arista de extremo trasera, dicha arista de aseguramiento acopla una superficie interior de dicho cuerpo conector para asegurar dicho poste a dicho cuerpo.

13. Un conector de cable coaxial como se definió en la reivindicación 12, en donde dicho cuerpo conector incluye un nicho formado en dicha superficie interior para recibir de manera segura dicha arista de aseguramiento.

146

14. Un conector de cable coaxial que comprende:

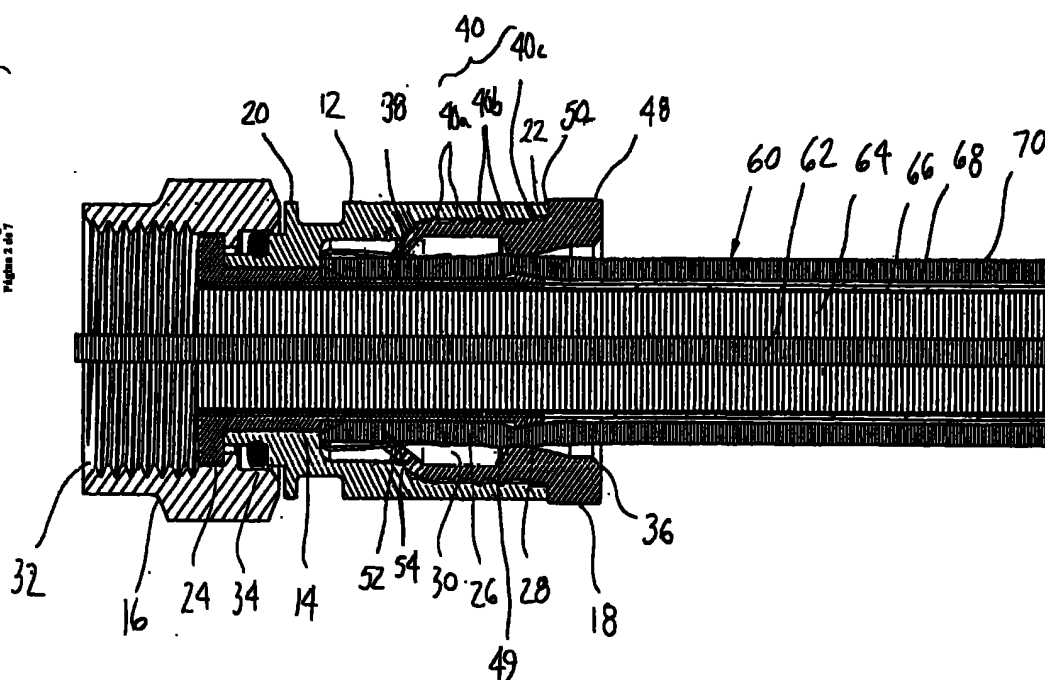
Un cuerpo conector que tiene un extremo receptor de manguito trasero;

Un manguito de aseguramiento axialmente movable sentado en dicho extremo receptor de manguito trasero de dicho cuerpo conector; y

Un poste anular dispuesto dentro de dicho cuerpo conector, dicho poste tiene una primera arista que se proyecta radialmente hacia fuera dispuesta en el extremo trasero de este, una porción de base rebordeada dispuesta en el extremo delantero de este y una arista de aseguramiento de cuerpo conector sobresaliente radialmente hacia fuera dispuesta entre dicha porción de base delantera y dicha arista de extremo trasera, dicha arista de aseguramiento acopla una superficie interior de dicho cuerpo conector para asegurar dicho poste de dicho cuerpo.

15. Un conector de cable coaxial como se definió en la reivindicación 14, en donde dicho cuerpo conector incluye un nicho formado en dicha superficie interior para recibir de manera segura dicha arista de aseguramiento.

Correa Express No.: ELB67444405UB
 Solicitante: Rodríguez et al.
 Título: Concurso de Cable Coaxial con
 Menorito con Ajuste por Fricción
 Nuestro Registro: 577-778P
 Página 2 de 7



Copia suministrada por USFTO de la IFW Image Database en 04/27/2006

REATIZ EVIDENIA ALANCON ENTENNEZ
TRANDETOTA E INTERPRETE OFFICI
RESOLUCION 2512 DE SET. 15/93 MINISTRIAL

149

Correo Express No.: EL85744468908
Solicitante: Rodriguez et al.
Titulo: Conector de Cable Coaxial con
Manguito con Ajuste por Friccion
Numero Registro: 373-778P
Pagina 3 de 7

FIG. 3A

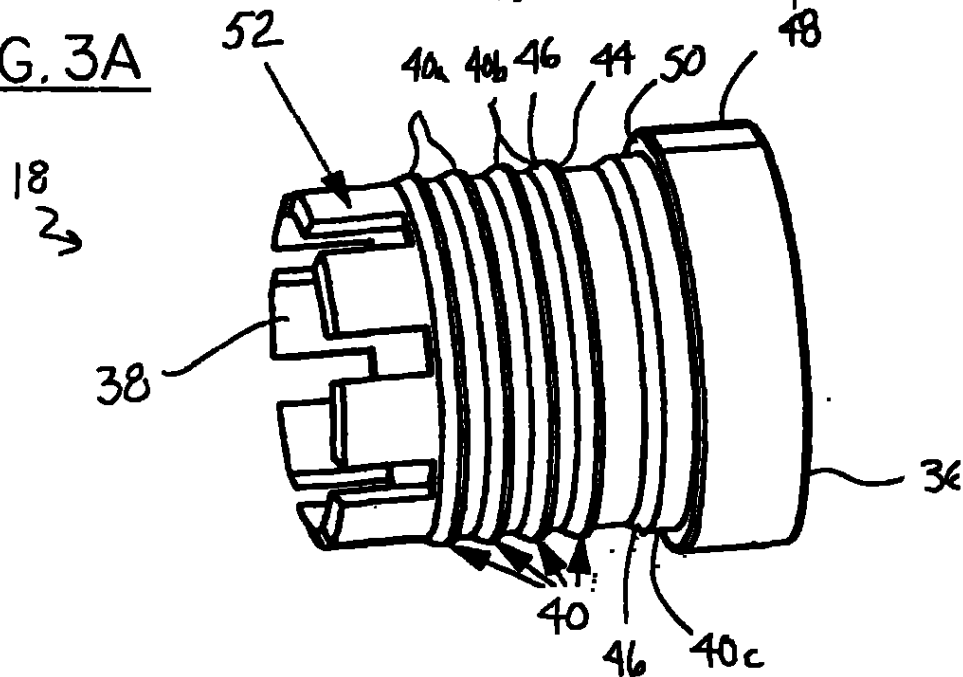
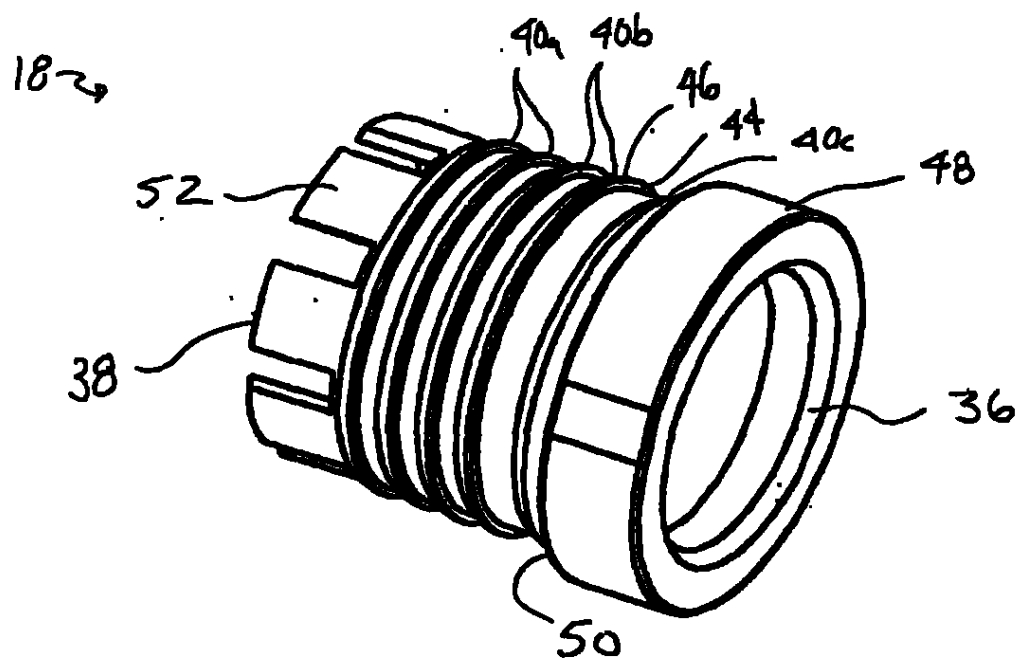


FIG. 3B

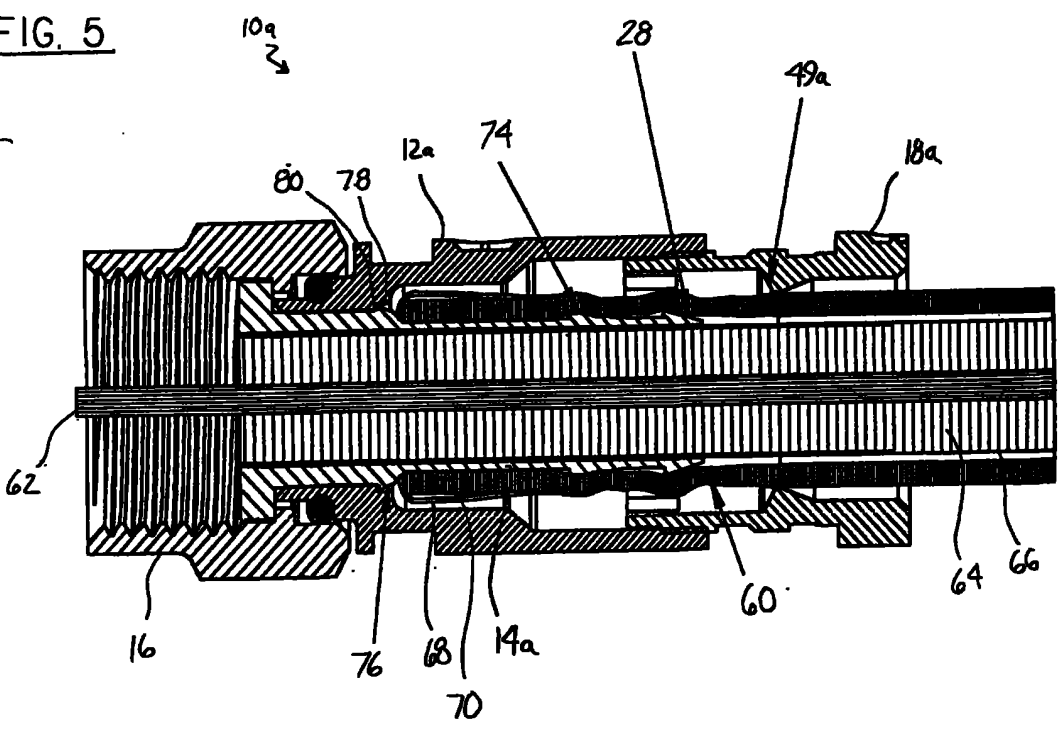


Mejor Copia Disponible

FIG. 5

Mejor Copia Disponible

Carroll Express Inc. EL 8074448905
N.º de Registro de la Oficina de Patentes
Título: Conector de Cable Conductor con
Módulo con Ajuste por Fricción
Número Registro: 877-7789
Página 3 de 7



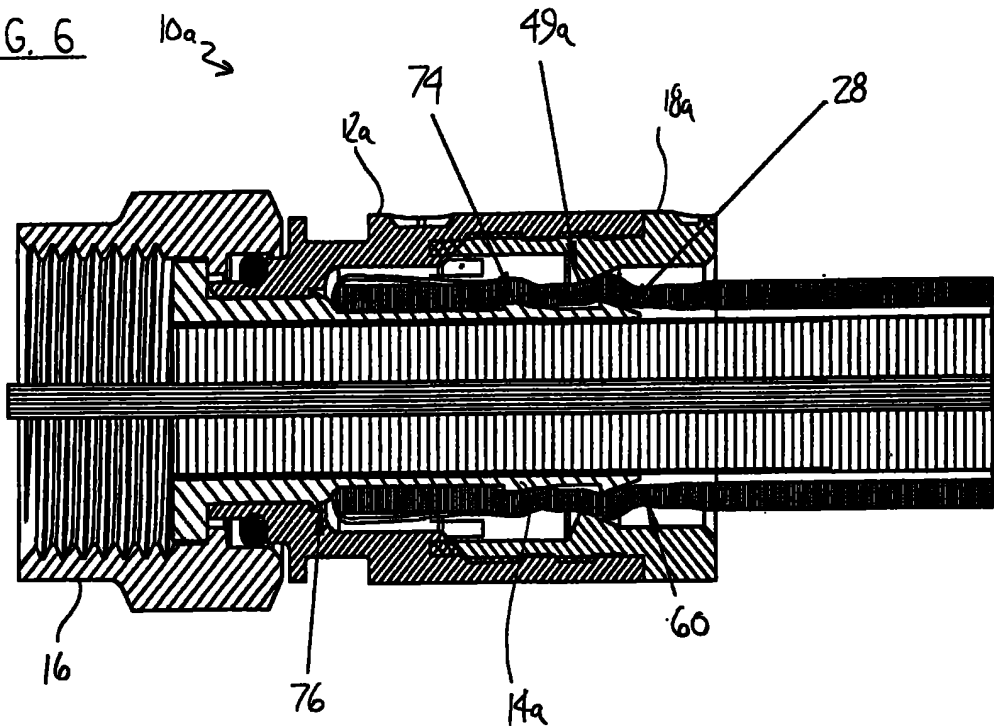
Copia suministrada por USPTO de la IPW Image Database en 04/27/2006

Correo Express No.: EL4974469105
Cablegramas: EL4974469105
Teléfono: 571-7780
Tráfico Correo de Cable Canadial con
Márgulo con Ajuste por Ystadin
Nuestro Registro: 571-7780
Página 6 de 7

Mejor Copia Disponible

FIG. 6

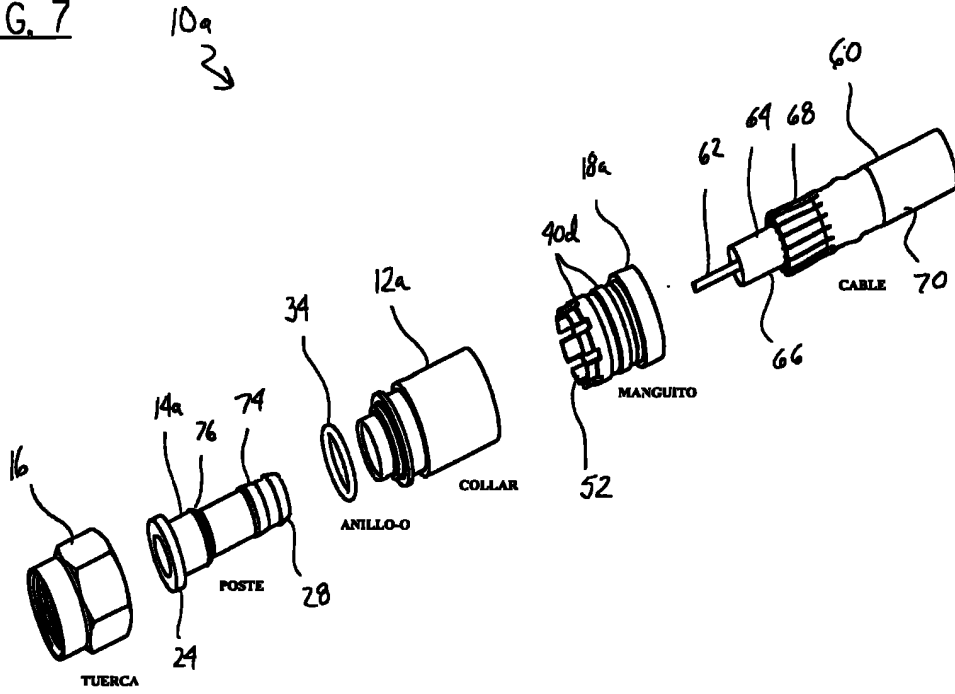
10a2



Copie manuscrite par USPTO de la IPW Image Drawings en 04/27/2006

FIG. 7

Correo Express No. 11.187.44.691.15
 República Argentina s.r.l.
 Calle Comercio 1000, Ciudad de Buenos Aires
 Teléfono: 577-7789
 Página 7 de 7



Copia suministrada por USPTO de la IPW Image Database en 04/27/2006

153

(3APK5)

RENTAS Y SERVICIOS ALARCON OTTOMAR
 S.A.
 "ALARCON OTTOMAR E HIJOS"
 RESOLUCION 3413 DE 1971, 13/08 JUNIOR 1974