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SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO



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 Ira: 2 PATENTES Eve: 1 REGDEPOSITO
 Act: 444 RESPUESTA A REQUE Folios: 88

67

Trámite : 002 Evento : 001 Actuación : 444

Expediente No. **15-269988**
 Asunto : Solicitud de Patente: "ENLACE A TIERRA PARA MECANISMO DE CONVERTIDOR ELÉCTRICO"
 Solicitante : **THOMAS & BETTS INTERNATIONAL, LLC**
 Fecha de Solicitud: 11 de noviembre de 2015

RESPUESTA A EXAMEN PRELIMINAR

ANDRES RINCON USCATEGUI, identificado como aparece al pie de mi firma, en mi condición de apoderado de la sociedad solicitante de la patente de la referencia, doy respuesta al Oficio 15491, notificado por fijación en lista el 29 de diciembre de 2015.

I. MODIFICACIONES AL PLIEGO REIVINDICATORIO

Con el fin de atender las observaciones realizadas por el examinador de manera preliminar al examen de patentabilidad, el solicitante decide aportar un nuevo capítulo reivindicatorio conformado por 10 reivindicaciones en las que se han incluido las siguientes modificaciones:

1. Se modificaron las reivindicaciones 1, 3, 5-7, 10 y 13 del pliego reivindicatorio original.
2. Se eliminaron las reivindicaciones 4, 8, 9, 12, y 15 del pliego reivindicatorio original.

Estas modificaciones se ajustan al artículo 34 de la Decisión 486 de 2000 y no constituyen una ampliación de la protección que correspondería a la divulgación contenida en la solicitud inicial.

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A pesar de eliminar materia del pliego reivindicatorio originalmente presentado, mi representada no renuncia a la protección que pueda obtener sobre dicha materia y se reserva el derecho de presentar una solicitud divisional que la contenga durante el trámite de la presente solicitud.

II. EN CUANTO AL PAGO DE TASA ADICIONAL POR EL NÚMERO DE REIVINDICACIONES

Me permito resaltar, tal y como mencioné anteriormente, que el nuevo pliego reivindicatorio consta de 10 reivindicaciones, razón por la cual no se requiere el pago de tasas por reivindicaciones adicionales.

III. EN CUANTO AL PODER Y LA EXISTENCIA Y REPRESENTACIÓN LEGAL DEL SOLICITANTE

Presento junto con este escrito el poder que me faculta para actuar en representación del solicitante, en el cual además se certifica su existencia y representación legal.

IV. EN CUANTO AL DOCUMENTO DE PRIORIDAD

Presento junto con este escrito la correspondiente copia certificada del documento de prioridad, con su debida traducción al castellano de lo pertinente.

V. EN CUANTO AL RESUMEN

De acuerdo a lo solicitado por el examinador, presento a continuación el siguiente nuevo resumen:

“Un enlace de puesta a tierra con un conector eléctrico para cable de energía tipo codo. El enlace de conexión a tierra incluye una porción de interfaz de casquillo, una porción receptora de tapa y una porción de tapa, en donde el enlace de puesta a tierra incluye además un elemento de puesta a tierra que se extiende entre la porción de interfaz de casquillo y una porción de recepción de tapa, y en donde la porción de interfaz de casquillo del enlace de puesta a tierra se inserta en un orificio en el conector eléctrico para cable de energía tipo codo. El elemento de

conexión a tierra incluye una porción expuesta que se proyecta por encima de una superficie del enlace de puesta a tierra, en donde la porción expuesta del elemento de conexión a tierra se fija mediante una abrazadera de línea viva conectada a tierra para conectar a tierra el ensamble de conector eléctrico. La porción de tapa recepciona un segundo conector de codo para acoplar de forma conductora el segundo conector de codo al conector eléctrico para cable de energía tipo codo.

VI. EN CUANTO A LAS OBJECIONES DE SUPUESTA FALTA DE CLARIDAD

1. Se eliminaron las expresiones “sustancialmente”, “generalmente” y “de varias funciones” del set reivindicatorio, de acuerdo a lo sugerido por su despacho.
2. Se modificaron las reivindicaciones 1 y 13 (ahora 10) de forma tal que estas ya no son definidas por resultados a alcanzar sino por características técnicas esenciales. Así mismo, me permito reiterar que las reivindicaciones 12 y 15 fueron eliminadas del pliego reivindicatorio.

Sin embargo, en cuanto a las objeciones realizadas, es preciso aclarar que los fragmentos objetados por definir resultados a alcanzar, ventajas o usos que pueden dársele a la invención, no corresponden a resultados, ventajas ni usos, sino a características técnicas funcionales de la invención, que en este caso se hacen indispensables para que un técnico medio pueda entender a cabalidad la invención y pueda determinar adecuadamente la configuración entre los elementos para que la invención funcione correctamente; lo anterior para garantizar que una persona normalmente versada en la materia pueda reproducir la invención.

Con respecto a lo anterior, la “GUÍA PARA EXAMEN DE SOLICITUDES DE PATENTE DE INVENCION Y MODELO DE UTILIDAD” de la SIC establece:

“Las características técnicas funcionales son los elementos que conforman las invenciones, descritos en términos de su uso o su función. No definen la invención, pero explican la relación que hay entre sus diversas características estructurales (...) Las reivindicaciones deben incluir características estructurales y funcionales cuando para la persona del oficio normalmente versada en la materia no sea obvio el

funcionamiento de los elementos característicos y la relación entre estos” (Subraya incluida en el texto).

Texto que además es acorde con el numeral 5.35 de las DIRECTRICES DE BÚSQUEDA INTERNACIONAL Y DE EXAMEN PRELIMINAR INTERNACIONAL DEL PCT de la Organización Mundial de la Propiedad Intelectual (OMPI), que establece:

“5.35 ...Por regla general, se deben rechazar por falta de claridad las reivindicaciones que intenten definir la invención, o una característica de la misma, por un resultado que debe alcanzarse (...) Sin embargo, no deberá plantearse objeción alguna si la invención sólo puede definirse en tales términos, y si el resultado es tal que puede obtenerse sin que sea necesaria una experimentación excesiva (véase el párrafo 5.46) y que, por ejemplo, puede ser verificado directa y positivamente por ensayos o procedimientos especificados adecuadamente en la descripción y que representen sólo un tanteo.” (Subraya incluida en el texto).

De acuerdo con lo anterior, los fragmentos objetados no solo pueden, sino que deben estar en las reivindicaciones, ya que resultan esenciales para que una persona del oficio normalmente versada en la materia entienda correctamente el funcionamiento de la invención.

VII. PETICIÓN

Teniendo en cuenta que la presente solicitud cumple con los requisitos de los artículos 26 y 27 de la Decisión 486 de 2000 y considerando que se ha dado respuesta a cada una de las observaciones de la Dirección de Nuevas Creaciones con respecto a otros aspectos que tienen que ver con la patentabilidad de la invención, solicito a su Despacho continuar con el trámite administrativo correspondiente.

VIII. ANEXOS

1. Nuevo pliego reivindicatorio conformado por 10 reivindicaciones;
2. Documento de poder a favor del solicitante;

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3. Copia certificada de prioridad, junto con la traducción al castellano de lo pertinente.

Señor director,



ANDRES RINCON USCATEGUI
C.C. 79.780.910 de Bogotá
U.P.A. 114.908

COLO-22359-0801-0001-3
IAG\IAG\ID-286661\WPC22359

REIVINDICACIONES

1. Un ensamble de conector eléctrico, caracterizado porque comprende:
 - un cuerpo de conector que comprende:
 - un extremo receptor de conductor;
 - un primer extremo de conector formado de forma perpendicular a una dirección axial del extremo receptor de conductor,
 - en donde el primer extremo de conector incluye un primer orificio axial que recibe un elemento de casquillo en el mismo; y
 - un segundo extremo de conector formado en forma perpendicular a la dirección axial del extremo receptor de conductor y opuesto al primer extremo de conector,
 - en donde el segundo extremo de conector incluye un segundo orificio axial formado en el mismo; y
 - un enlace de puesta a tierra que tiene una porción de interfaz de casquillo, una porción de recepción de tapa, y una porción de tapa,
 - en donde el enlace de puesta a tierra incluye además un elemento de puesta a tierra que se extiende entre la porción de interfaz de casquillo y una porción de recepción de tapa,
 - en donde el segundo orificio axial del segundo extremo de conector recibe la porción de interfaz de casquillo del enlace de puesta a tierra,
 - en donde el elemento de conexión a tierra incluye una porción expuesta que se proyecta por encima de una superficie del enlace de conexión a tierra que se acopla a una abrazadera de línea viva, durante la conexión a tierra del ensamble de conector eléctrico
2. El ensamble de conector eléctrico de conformidad con la reivindicación 1, caracterizado porque el segundo orificio axial en el segundo extremo de conector incluye una configuración cónica, y
 - en donde la porción de interfaz de casquillo del enlace de puesta a tierra incluye una configuración correspondientemente cónica para acoplar la configuración cónica del segundo orificio axial.
3. El ensamble de conector eléctrico de conformidad con la reivindicación 2, caracterizado porque la porción expuesta del elemento de puesta a tierra se proyecta desde una superficie de la porción de recepción de la tapa del enlace de conexión a tierra, en donde la porción de recepción de tapa incluye una configuración cónica.

4. El ensamble de conector eléctrico de conformidad con la reivindicación 1, caracterizado porque la porción expuesta comprende un tercer orificio formado axialmente en la misma,

en donde el tercer orificio incluye una porción de fijación de enlace de puesta a tierra, y

en donde, después de la inserción de la porción de interfaz de casquillo del enlace de puesta a tierra en el segundo orificio del segundo extremo de conector, el enlace de puesta a tierra es asegurado dentro del segundo orificio mediante la aplicación de una herramienta dentro de la porción de fijación de enlace de puesta a tierra del tercer orificio.

5. El ensamble de conector eléctrico de conformidad con la reivindicación 4, caracterizado porque comprende además:

una tapa de aislamiento que cubre la porción expuesta del elemento de conexión a tierra cuando el conector eléctrico esté en una configuración sin conexión a tierra.

6. El ensamble de conector eléctrico de conformidad con la reivindicación 5, caracterizado porque la tapa aislante comprende un cuerpo aislante y un elemento de fijación,

en donde el cuerpo aislado de la tapa aislante comprende una cavidad cónica en el mismo para recibir el segundo extremo del cuerpo aislante del enlace de conexión a tierra,

en donde el elemento de fijación de la tapa aislada se proyecta dentro de la cavidad cónica,

en donde el tercer orificio incluye una segunda porción de fijación de tapa, y

en donde, después de la colocación de la cavidad cónica de la tapa aislante en el segundo extremo cónico del enlace de conexión a tierra, el elemento de fijación se acopla a la porción de sujeción de tapa del tercer orificio.

7. El ensamble de conector eléctrico de conformidad con la reivindicación 5, caracterizado porque la porción expuesta del elemento de conexión a tierra comprende una porción de acoplamiento de herramienta y una porción de fijación de tapa,

en donde, después de la inserción del enlace de conexión a tierra en el segundo orificio del segundo extremo de conector, el elemento de puesta a tierra es asegurado dentro del segundo orificio mediante la aplicación de una herramienta a la porción de acoplamiento de herramienta.

8. El ensamble de conector eléctrico de conformidad con la reivindicación 2, caracterizado porque el elemento de puesta a tierra comprende un segundo extremo para asegurar el elemento de conexión a tierra y el enlace de conexión a tierra a un casquillo.

9. Un ensamble conector de codo para cable de energía de medio o alto voltaje, caracterizado porque comprende:

un cuerpo de conector que tiene un extremo receptor de conductor, un extremo receptor de casquillo que se proyecta de forma perpendicular desde el cuerpo de conector, y un extremo de conexión que se proyecta de forma perpendicular desde el cuerpo de conector y orientado opuesto al extremo receptor de casquillo,

en donde el cuerpo de conector incluye un primer orificio axial que se comunica con cada uno de un segundo orificio axial y un tercer orificio axial en los extremos receptor de casquillo y de conexión, respectivamente, y

en donde el extremo de recepción de casquillo recibe un casquillo de conmutación en el mismo;

un enlace de puesta a tierra que se inserta en el tercer orificio axial del extremo de conexión,

en donde el enlace de puesta a tierra incluye cada una de una porción receptora de tapa y una porción de tapa de reducción, en donde la porción de recepción de tapa está alineada con una porción de interfaz de casquillo que se inserta en el tercer orificio axial;

un elemento de puesta a tierra que se inserta dentro de un orificio en el enlace de puesta a tierra para acoplarse de forma conductora con el casquillo de conmutación en el tercer orificio axial, en donde el elemento de puesta a tierra comprende una porción expuesta para acoplar una abrazadera de línea viva a tierra, durante la puesta a tierra del ensamble de conector eléctrico,

en donde la porción de tapa de reducción del enlace de conexión a tierra está configurada recibe un conector de codo que tiene un amperaje reducido; y

una tapa de aislamiento que cubre la porción conductora expuesta del dispositivo de puesta a tierra durante la operación normal del conector eléctrico.

10. Un método, caracterizado porque comprende:

conectar una interfaz de casquillo de un conector de codo para cable de energía a un casquillo de conmutación,

en donde el conector de codo para cable de energía comprende además un cuerpo de conector para recibir un cable de energía en el mismo, y un extremo de conector que se proyecta desde el cuerpo de conector en sentido opuesto desde la

interfaz de casquillo,

en donde el extremo de conector incluye un orificio axial en el mismo;

insertar un enlace de puesta a tierra en el orificio axial en el extremo de conector,

en donde el enlace de puesta a tierra incluye un cuerpo aislado, una porción de tapa y una porción de recepción de casquillo, y en donde el enlace de puesta a tierra comprende un elemento de puesta a tierra que se extiende a través del mismo,

en donde el elemento de conexión a tierra está configurado para acoplarse con el casquillo en la interfaz de casquillo e incluye además una porción conductora expuesta que se proyecta desde la porción de recepción de tapa;

instalar una primera tapa de aislamiento sobre la porción conductora expuesta del enlace de conexión a tierra;

instalar un conector de codo de amperaje reducido sobre la porción de tapa del enlace de puesta a tierra;

energizar el conector de codo para cable de energía;

desenergizar el conector de codo para cable de energía;

retirar el conector de codo de amperaje reducido de la porción de tapa del enlace de puesta a tierra;

instalar una segunda tapa aislante sobre la porción de tapa;

retirar la primera tapa aislada de la porción conductora expuesta del enlace de conexión a tierra; y

fijar una abrazadera de línea viva a la porción conductora expuesta del enlace de conexión a tierra,

en donde la abrazadera de línea viva está acoplada a una línea de tierra para poner a tierra el conector de codo de cable de energía.

CAVELIER**ABOGADOS**

EDIFICIO SISKI
CARRERA 4a N° 72-35
BOGOTÁ, B – COLOMBIA

REPRESENTACION**REPRESENTATION**

Yo (nosotros), abajo firmado (s)/I (we), the undersigned

THOMAS & BETTS INTERNATIONAL, LLC

domiciliado (s) 501 SILVERSIDE ROAD, SUITE 67,
en/of DELAWARE 19809, ESTADOS UNIDOS
DE AMÉRICA

Por el presente nombramos a CAVELIER ABOGADOS, sociedad colectiva constituida de conformidad con las leyes de la República de Colombia, mediante Escritura Pública No. 6233 del 10 de septiembre de 1974, otorgada en la Notaría Sexta del Círculo de Bogotá, domiciliada en Bogotá D.C., con matrícula mercantil No. 00820237 y NIT 860041367-3, domiciliada en la Carrera 4a N° 72-35, Bogotá, Colombia, como nuestra representante en todos los asuntos de Propiedad Industrial e Intelectual, con facultad para recibir notificaciones y nombrar apoderados judiciales o extrajudiciales.

CAVELIER ABOGADOS también podrá representarnos, con las mismas facultades arriba indicadas, ante cualesquiera entidades o personas, ejerzan o no jurisdicción, autoridades administrativas o jurisdiccionales, tribunales de arbitramento, en asuntos de naturaleza civil, comercial, penal, constitucional, competencia, competencia desleal, administrativa, contencioso administrativa, protección del consumidor, variedades vegetales, nombres de dominio, oposiciones u observaciones, cancelación administrativa y judicial, nulidad, medidas cautelares, concesión de licencias, acciones de tutela, la protección de secretos industriales, derecho regulatorio y en general para que nos represente en cualesquiera acciones y procesos que promovamos o se nos promuevan.

Do hereby appoint CAVELIER ABOGADOS, a general partnership organized under the laws of the Republic of Colombia by means of Public Deed No. 6233 of September 10, 1974, granted at Notary Sixth of the Bogota Circuit, domiciled in Bogota D.C., with Mercantile Registration No. 00820237 and Taxpayer Identification Number 860041367-3, domiciled at Carrera 4a N° 72-35, Bogota, Colombia, as our representative for all Industrial and Intellectual Property matters with faculty to receive notifications and appoint attorneys in and out of Court.

CAVELIER ABOGADOS may also represent us, with the same faculties stated above, before any entities or persons, with or without jurisdiction, administrative or jurisdictional authorities, courts of arbitration, in civil, commercial, criminal, constitutional, competition, unfair competition, administrative, administrative contentious, consumer protection, plant varieties, domain names, opposition or observation matters, administrative and Court cancellation, nullity, precautionary measures, licensing, action for writ mandamus, protection of trade secrets, regulatory law and in general represent us in any actions and suits instituted by us or against us.

La representante podrá, en nuestro nombre, designar apoderados para actuar ante autoridades administrativas y judiciales, por vía extrajudicial y también procesalmente en nuestro nombre, como demandantes, como demandados, como litisconsortes, como agentes oficiosos, como terceros, por llamamiento en garantía o como intervinientes ad excludendum. Dentro de esta

autorización, la representante podrá facultar a los apoderados que ella designe para transigir, conciliar, admitir los hechos del proceso, desistir, cancelar, recibir, renunciar y sustituir el poder que se le otorgue. Así mismo, la representante tendrá la facultad para revocar el poder así otorgado en el momento que considere pertinente. La representante en todo caso podrá ratificar los actos de agentes oficiosos.

The representative may, in our name, designate attorneys to act before administrative and judicial authorities, through out-of-court channels, and also procedurally in our name as plaintiff, defendant, joint litigant, representative without power of attorney, third party, when summoned to appear in court or as intervener ad excludendum. Under this authorization, the representative may empower the attorneys appointed thereby to compromise, conciliate, admit the facts of the case, desist, cancel, receive, resign and substitute the power of attorney granted thereto. Likewise, the representative shall have the faculty of revoking the power of attorney thus granted at any time it may deem convenient. The representative may in any case ratify the acts of representatives without a power of attorney.

Dado y firmado hoy/Given and signed this 11-24-15

En/in Memphis, Tennessee, USA

Por/by W. David Smith Jr.

Vice President and Secretary, Thomas & Betts International, LLC

Firma/Signature



Señor Director

DIRECCIÓN DE NUEVAS CREACIONES

Superintendencia de Industria y Comercio

E. S. D.

Asunto :Solicitud de patente para **ENLACE A TIERRA PARA
MECANISMO DE CONVERTIDOR ELÉCTRICO**
Expediente : 15.269.988
Solicitante : **THOMAS & BETTS INTERNATIONAL, LLC**

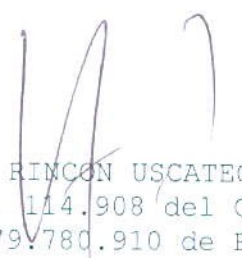
Yo, ADRIANA ZAPATA GIRALDO mayor de edad, vecina de esta ciudad, identificada con cédula de ciudadanía No. 51.680.061 de Bogotá, en mi calidad de representante legal de la sociedad CAVELIER ABOGADOS domiciliada en la Carrera 4 No. 72-35, en desarrollo de la representación que le fue otorgada por **THOMAS & BETTS INTERNATIONAL, LLC**, confiero poder a los doctores ANDRES RINCON USCATEGUI, identificado con cédula de ciudadanía No. 79.780.910 de Bogotá, portador de la tarjeta profesional No. 114.908, LUZ CLEMENCIA DE PAEZ, identificada con cédula de ciudadanía No. 35.456.344 de Usaquén, portadora de la Tarjeta Profesional No. 23.555, JORGE CHAVARRO ARISTIZABAL, identificado con la cédula de ciudadanía No. 16.209.380 de Cartago (Valle), portador de la Tarjeta Profesional No. 40.119 y EDNA DARMELY SARMIENTO CHARRY identificada con la cédula de ciudadanía No. 52.006.265 de Bogotá, portadora de la Tarjeta Profesional No. 65.794, para continuar con el trámite de la patente indicada en la referencia

Los apoderados quedan facultados para interponer recursos, transigir, conciliar, desistir, cancelar, recibir, renunciar, sustituir y revocar las sustituciones, y ratificar los actos de agentes oficiosos.

Señor Director,


ADRIANA ZAPATA GIRALDO
C.C. No. 51.680.061 de Bogotá

Acepto:

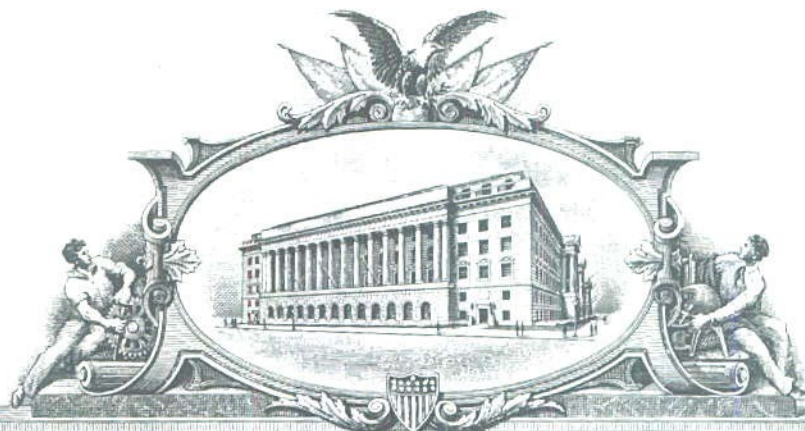

ANDRES RINCON USCATEGUI
T.P.A. No. 114.908 del C.S.J.
C.C. No. 79.780.910 de Bogotá

"EXCELENCIA LEGAL EN UN MUNDO SIN FRONTERAS"

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13



PA 7556113

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

November 02, 2015

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: 62/080,496

FILING DATE: November 17, 2014

THE COUNTRY CODE AND NUMBER OF YOUR PRIORITY APPLICATION, TO BE USED FOR FILING ABROAD UNDER THE PARIS CONVENTION, IS US62/080,496

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



JOHN A BURSON

Certifying Officer

A
14

Electronic Acknowledgement Receipt	
EFS ID:	20710732
Application Number:	62080496
International Application Number:	
Confirmation Number:	8771
Title of Invention:	GROUNDING LINK FOR ELECTRICAL CONNECTOR MECHANISM
First Named Inventor/Applicant Name:	Larry N. Siebens
Customer Number:	83544
Filer:	Robin Clark/gosia ruszkowska-noon
Filer Authorized By:	Robin Clark
Attorney Docket Number:	0067-0172PR
Receipt Date:	17-NOV-2014
Filing Date:	
Time Stamp:	12:11:26
Application Type:	Provisional

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	\$ 260
RAM confirmation Number	9494
Deposit Account	
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
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1		TB2592_Provisional_Application_0067_0172PR.pdf	108377 6011373b3ff342233039d582fa486550f6314d2f6	yes	27
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Specification		1	18	
	Claims		19	26	
	Abstract		27	27	
Warnings:					
Information:					
2	Drawings-only black and white line drawings	TB2592_Provisional_Drawings_0067_0172PR.pdf	957755 d12f70c8884d1c384547dc1hab9608ab0d9c8ab1	no	11
Warnings:					
Information:					
3	Transmittal of New Application	TB2592_Transmittal_0067_0172P.pdf	67528 5d273715fb3d02886717317ea755f7ee60605b54	no	1
Warnings:					
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4	Provisional Cover Sheet (SB16)	TB2592_Provisional_Cover_Sheet_0067_0172PR.pdf	301144 fee6fac599f8acbdad5d6b68ba3f5c4e8e1b482d15	no	3
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PROVISIONAL APPLICATION FOR PATENT COVER SHEET – Page 1 of 2

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INVENTOR(S)		
Given Name (first and middle [if any])	Family Name or Surname	Residence (City and either State or Foreign Country)
Larry N.	Siebens	Asbury, NJ
Alan D.	Borgstrom	Hackettstown, NJ

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

TITLE OF THE INVENTION (500 characters max):

GROUNDING LINK FOR ELECTRICAL CONNECTOR MECHANISM

Direct all correspondence to: **CORRESPONDENCE ADDRESS**

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ENCLOSED APPLICATION PARTS (check all that apply)

☐ Application Data Sheet. See 37 CFR 1.76.	☐ CD(s), Number of CDs _____
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☒ Specification (e.g., description of the invention) Number of Pages <u>27</u>	

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SIGNATURE /Robin C. Clark, Reg. No. 40,956/ DATE November 17, 2014TYPED OR PRINTED NAME Robin C. Clark REGISTRATION NO. 40,956
(if appropriate)TELEPHONE 571-297-0007 DOCKET NUMBER 0067-0172PR

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In re Patent Application of	)	
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Larry N. Siebens et al.	)	Group Art Unit: Unassigned
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Application No.: Unassigned	)	Examiner: Unassigned
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Filed: November 17, 2014	)	
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For: GROUNDING LINK FOR	)	
ELECTRICAL CONNECTOR	)	
MECHANISM	)	

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Respectfully submitted,

SNYDER, CLARK, LESCH & CHUNG, L.L.P.

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Date: November 17, 2014

GROUNDING LINK FOR ELECTRICAL CONNECTOR MECHANISM

BACKGROUND OF THE INVENTION

[0001] The present invention relates to electrical cable connectors, such as loadbreak connectors and deadbreak connectors. More particularly, aspects described herein relate to an electrical cable connector, such as a power cable elbow or T-connector connected to electrical switchgear assembly.

[0002] Loadbreak and deadbreak connectors used in conjunction with 15 through 35 KV switchgear generally include power cable elbow connectors having one end adapted for receiving a power cable and another end adapted for receiving a loadbreak/deadbreaK bushing insert or other switchgear device. The end adapted for receiving the bushing insert generally includes an elbow cuff for providing an interference fit with a molded flange on the bushing insert.

[0003] In some implementations, the elbow connector may include a second opening formed opposite to the bushing insert opening for facilitating connection of the elbow connector to the bushing and to provide conductive access to the power cable by other devices, such as a surge arrestor, a tap plug, an additional elbow connector, etc.

[0004] In still further implementations, utility companies may use reducing tap plugs with the second elbow opening to provide, for example, a 200 ampere (amp) interface to an existing 600 amp system. When isolating and grounding the system, a 200 amp grounding elbow is installed on the reducing tap plug. Unfortunately, 200 amp

grounding elbows are only rated for a momentary fault current of 10 kiloamps, while 600 amp systems may require momentary fault currents of up to 25 kiloamps.

BRIEF DESCRIPTION OF THE DRAWINGS

- [0005] Figure 1A is a schematic, exploded side view illustrating a power cable electrical connector and grounding link consistent with implementations described herein;
- [0006] Figure 1B is a schematic side view of the power cable elbow connector and grounding link of Fig. 1A in an assembled configuration;
- [0007] Figure 1C is a schematic side view of the power cable elbow connector and grounding link of Fig. 1A in another assembled configuration;
- [0008] Figures 2A and 2B are cross-sectional side and top views, respectively, of the grounding link of Figs. 1A-1C;
- [0009] Figure 2C is another cross-sectional side view of the grounding link of Figs. 1A-1C.
- [0010] Figure 3 is a cross-sectional side view of the insulated cap of Figs. 1A and 1B;
- [0011] Figure 4 is a schematic side view of an exemplary hot line clamp;
- [0012] Figs. 5A-5D are cross sectional/side view illustrations of another exemplary grounding link consistent with embodiments described herein; and
- [0013] Fig. 6 is a schematic side view of an exemplary ball socket clamp for use with embodiments consistent with Figs. 5A-5D.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0014] The following detailed description refers to the accompanying drawings. The same reference numbers in different drawings may identify the same or similar elements.

[0015] Fig. 1A is a schematic exploded side view of a power cable elbow connector assembly 100 consistent with implementations described herein, e.g., a 600 amp elbow assembly. Fig. 1B is a schematic side view of the power cable elbow connector assembly 100 in a first assembled configuration. Fig. 1C is a schematic side view of the power cable elbow connector assembly 100 in a second assembled configuration. As shown, power cable elbow connector assembly 100 may include a main housing body 102 that includes a conductor receiving end 104 for receiving a power cable 106 therein and first and second T-ends 108/110 that include openings for receiving an equipment bushing, such as a deadbreak or loadbreak transformer bushing 111 or other high or medium voltage. Consistent with implementations described herein, second T-end 110 may be configured to receive a grounding link 200 described in additional detail below.

[0016] As shown, conductor receiving end 104 may extend along a main axis of assembly 100 and may include a bore 112 extending therethrough. First and second T-ends 108/110 may project substantially perpendicularly from conductor receiving end 104 in opposing directions from one another. First and second T-ends 108/110 may include bores 114/116, respectively, formed therethrough for receiving equipment, bushings, and/or plugs. A contact area 118 may be formed at the confluence of bores 112, 114, and 116.

[0017] Power cable elbow connector assembly 100 may include an electrically conductive outer shield 120 formed from, for example, a conductive peroxide-cured synthetic rubber, commonly referred to as EPDM (ethylene-propylene-dienemonomer).

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Within shield 120, power cable elbow connector assembly 100 may include an insulative inner housing (not shown in the figures), typically molded from an insulative rubber or epoxy material, and a conductive or semi-conductive insert that surrounds the connection portion of power cable 106.

[0018] As shown in Fig. 1A, bushing 111 may include a stud portion 122 projecting axially therefrom. During assembly of elbow connector 100 onto bushing 111, as shown in Fig. 1B, stud portion 122 of bushing 111 is received into contact area 118 and extend through an opening in a spade portion coupled to power cable 106 (not shown).

[0019] Consistent with embodiments described herein, grounding link 200 may be configured to conductively connect to power cable 106 and bushing 111 via second T-end 110 and second bore 116.

[0020] Fig. 2A is a cross-sectional view of an embodiment of grounding link 200 consistent with implementations described herein. Fig. 2B is a top view of grounding link 200. Fig. 2C is a cross-sectional view of grounding link 200 into which grounding element 216 has been inserted.

[0021] As shown in Figs. 2A and 2C, grounding link 200 may include a link body 202 that includes elbow interface bushing portion 204, insulated cap receiving portion 206, and tap interface portion 208. Grounding link 200 may further include conductive bus bar 210, a tap conductor portion 212, and bore 214 extending between interface bushing portion 204 and cap receiving portion 206 for receiving grounding element 216, as shown in Fig. 2C.

[0022] In general, grounding link 200 may be configured to provide a conductive link between second T-end 110 on elbow connector assembly 100 and both a grounding

element 216 received within bore 214 (described in detail below) and tap conductor portion 212 via bus bar 210. In an exemplary implementation, link body 202 may include an electrically conductive outer shield 218 formed from, for example, a conductive or semi-conductive peroxide-cured synthetic rubber (e.g., EPDM). In other implementations, at least a portion of grounding link 200 may be painted with conductive or semi-conductive paint to form shield 218. Within shield 218, grounding link 200 may include an insulative inner housing 220, typically molded from an insulative rubber or epoxy material. Within insulative inner housing 220, grounding link 200 may include a conductive insert 222 that surrounds, or at least partially surrounds bore 214. For example, insert 222 may be formed of copper or other conductive metal and may function to conductively couple bore 214 to bus bar 210.

[0023] As shown in Fig. 1B, interface bushing portion 204 of grounding link 200 is configured (e.g., tapered or conically shaped) to be received within bore 116 in second T-end 110 during assembly of grounding link 200 onto elbow connector assembly 100.

[0024] As shown in Fig. 2A, tap conductor portion 212 of grounding link 200 is configured to be conductively coupled to bore 214/insert 222 (and grounding element 216 received therein) via bus bar 210 extending therebetween and embedded within insulative inner housing 220 of link body 202. In particular, tap conductor portion 212 may be configured to extend substantially perpendicularly from bus bar 210. An exposed end of tap conductor portion 212 (i.e., extending from a body 202) may be provided within tap interface portion 208 for engaging another device, such as an elbow connector 150, as shown in Fig. 1A and 1B, and insulated cap 170, as shown in Fig. 1C, depending on the operational state of grounding link 200 (described below).

[0025] As shown in Fig. 2A and 2C, tap interface portion 208 may include a stepped configuration 224 for engaging connector 150 and cap 170. Further, as shown in Figs. 2A and 2C, stepped configuration 224 may include a conductive or semi-conductive material to insure electric continuity on exposed surfaces of assembly 100

[0026] For deadbreak embodiments, such as that shown in the figures, a bail securing element 226 may be provided in a surrounding relationship to tap interface portion 208 for engaging a bailing element 152 to secure elbow 150 to grounding link 200, as shown in Fig. 1B. Consistent with embodiment described herein, a loadbreak interface on tap interface portion 208 may also be provided. Consistent with embodiments described herein, tap interface portion 208 may comprise a reducing tap for provided a 200 amp interface to a 600 amp elbow connector 100.

[0027] Insulated cap receiving portion 206 of body 202 may include a tapered portion 228 and a base portion 230. Tapered portion 228 projects from base portion 230 in an axial direction away from bushing interface portion 204 and includes a tapered configuration for receiving a cavity 308 in insulated cap 300 (described below).

[0028] As shown in Fig. 2C, grounding element 216 includes a substantially cylindrical configuration shaped for insertion into bore 214 within link body 202 between interface bushing portion 204 and cap receiving portion 206. As shown in Fig. 2C, when inserted within link body 202, grounding element is conductively coupled with bus bar 210 via conductive insert 222. Grounding element 216 includes a stud receiving end 232 and a clamp engaging end 234 that projects beyond an end of insulated cap receiving portion 206 when installed within link body 202. Grounding element 216 may be formed

of a conductive material, such as copper, brass, steel, or aluminum and, upon assembly, may conductively couple with power cable 106 and bushing 112 via stud portion 122.

[0029] In one embodiment, stud receiving end 232 may include a threaded opening 236 for matingly engaging corresponding threads on stud portion 122 of bushing 111, although other means for coupling with stud portion 122 may be incorporated, such as a push or snap-on connection, etc. Furthermore, in some implementations, the male/female relationship of stud portion 122 and stud receiving end 232 may be reversed.

[0030] As shown in Fig. 2C, clamp engaging end 234 includes a clamp engaging outer surface 238 and a multi-function bore 240 formed axially therein. As shown, clamp engaging outer surface 238 extends beyond an end of tapered portion 228 of insulated cap receiving portion 206. As described in detail below, clamp engaging outer surface 238 provides an engagement surface for engaging a hot line clamp or other suitable ground clamp device. Although clamp engaging outer surface 238 is depicted in Fig. 2C as having a smooth configuration, in other implementations, clamp engaging outer surface 238 may be provided with a high friction surface, such as a grooved or knurled surface to facilitate secure clamping.

[0031] Multi-function bore 240 extends axially within clamp engaging end 234 of grounding element 216 and includes a grounding link attachment portion 242 and cap securing portion 244. As shown in Fig. 2C, grounding link attachment portion 242 of multi-function bore 240 may be formed on the interior of multi-function bore 240 and includes a tool engaging configuration for receiving a tool, such as a hex wrench, therein.

[0032] During installation of grounding link 200, assume that power cable 106 is installed within elbow connector 100 and first T-end 108 of elbow connector 100 is

installed onto bushing 111. At this point, elbow interface bushing portion 204 of grounding link 200 is inserted into bore 116 in second T-end 110 and grounding element 216 is inserted into bore 204 such that stud receiving end 232 of grounding element 216 engages stud 122 projecting through a corresponding portion of power cable 106 (e.g., a spade connector (not shown). Threaded opening 236 in grounding element 216 may be threaded onto stud portion 122 of bushing 111 and secured using a suitable tool via multi-function bore 240 engaged with grounding link attachment portion 242. Although grounding link attachment portion 242 is depicted in Fig. 2A as including a hexagonal surface configuration, in other embodiments, different types of tool engaging configurations may be used, such as flat or Phillips head configurations, a Torx configuration, a 12-sided configuration, etc.

[0033] As shown in Fig. 2C, cap securing portion 244 of multi-function bore 240 may include an internally threaded configuration for use in securely retaining insulated cap 300 (shown in Figs. 1A and 1B). Fig. 3 is a cross-sectional view of an exemplary insulated cap 300. As shown, insulated cap 300 may include an outer conductive or semi-conductive shield 302, an insulative inner housing 304, typically molded from an insulative rubber or epoxy material, and a conductive or semi-conductive insert 306 that surrounds clamp engaging end 234 of grounding element 216 once insulated cap 300 is installed on insulated cap receiving portion 206 of grounding link 200.

[0034] As shown in Fig. 3, insulated cap 300 includes a substantially conical cavity 308 formed therein for receiving clamp engaging end 234 and tapered portion 228 of grounding link 200. As described briefly above, the conical configuration of cavity 308 corresponds to the tapered configuration of tapered portion 228 to allow insulated cap

300 to become seated on grounding link 200 during installation. Furthermore, as shown in Fig. 3, insulated cap 300 may include an engagement stud 309 having a threaded outer surface for engaging threaded cap securing portion 244 of multi-function bore 240 in grounding element 216. During assembly, engagement stud 309 may be threaded into cap securing portion 244 and tightened to secure insulated cap 300 to grounding link 200.

[0035] In one exemplary implementation, insulated cap 300 may include a voltage detection test point assembly 310 for sensing a voltage in connector assembly 100. Voltage detection test point assembly 310 may be configured to allow an external voltage detection device to detect and/or measure a voltage associated with elbow connector assembly 100.

[0036] For example, as illustrated in Fig. 3, voltage detection test point assembly 310 may include a test point terminal 312 embedded in a portion of insulative inner housing 304 of insulated cap 300 and extending through an opening within outer shield 302. In one exemplary embodiment, test point terminal 312 may be formed of a conductive metal or other conductive material. In this manner, test point terminal 312 may be capacitively coupled to grounding element 216 upon installation of insulated cap 300 on grounding link 200.

[0037] As shown in Figs. 1A and 1B, a test point cap 314 may sealingly engage an exposed portion of test point terminal 312 and outer shield 302 of insulated cap 300. In one implementation, test point cap 314 may be formed of a semi-conductive material, such as EPDM. When test point terminal 312 is not being accessed, test point cap 314 may be mounted on test point assembly 310. Because test point cap 314 is formed of a conductive or semiconductive material, test point cap 314 may ground test point

assembly 310 when in position. Test point cap 314 may include an aperture 316 for facilitating removal, e.g., using a hooked lineman's tool, etc.

[0038] When it is desired to perform work on a particular line or switchgear component, it is necessary to ensure that the system is properly de-energized and grounded before work can begin. Consistent with embodiments described herein, to accomplish this, a technician first tests connector 100, e.g., using voltage detection test point assembly 310, to ensure that connector 100 has been de-energized. If the test indicates that the connector 100 is de-energized, elbow connector 150 may be removed from tap interface portion 208 (e.g., by removing bailing element 152) and replaced with insulated cap 170. Next, insulated cap 300 is removed (e.g., by unscrewing) from grounding link 200. As shown in Fig. 1C, after removal of insulated cap 300 from grounding link 200, clamp engaging end 234 of grounding element 216 is exposed.

[0039] Fig. 4 is a schematic side view of an exemplary hot line clamp 400. Fig. 2C is a schematic side view of hot line clamp 400 coupled to grounding link 200 in a manner consistent with embodiments described herein.

[0040] Referring to Fig. 4, in one exemplary implementation, hot line clamp 400 includes a conductive body 402, a clamping member 404, and a ground line attachment portion 406. Conductive body 402 may be formed of a conductive metal, such as brass or aluminum and may include a generally v or c-shaped region 408 for receiving a portion of clamp engaging end 234 of grounding element 216. For example, a width "W" may be substantially similar, yet slightly larger than an outside diameter of clamp engaging end 140. With such a configuration, v-shaped region 408 may easily slip onto exposed clamp engaging end 140 following removal of insulated cap 300.

[0041] As shown in Fig. 4, conductive body 402 may include an opposing portion 410 projecting from body 402 in a location opposing v-shaped region 408. Opposing portion 410 includes a threaded aperture therethrough configured to receive clamping member 404, such that clamping member is positioned in clamping relation to v-shaped region 408.

[0042] Clamping member 404, in one exemplary embodiment, includes a generally cylindrical, threaded body 412 having a tool engaging portion 414 on one end and a part engagement portion 416 on an opposing end, distal from tool engaging portion 414. During assembly of hot line clamp 400, body 412 is threaded through opposing portion 410 such that part engagement portion 416 opposes v-shaped region 408.

[0043] As shown in Fig. 1C, during connection of hot line clamp 400 to elbow connector grounding link 200, v-shaped region 408 of conductive body 402 is placed over the exposed clamp engaging end 234 of ground element 216. Tool engaging portion 414 of clamping member 404 is then rotated, e.g., using a lineman's hook, causing part engaging portion 416 to travel toward v-shaped region 408, thus securing clamp engaging end 140 of grounding link 200 within hot line clamp 400.

[0044] Returning to Fig. 4, conductive body 402 of hot line clamp 400 also includes an aperture 418 for receiving ground line attachment portion 406. Ground line attachment portion 406 may include a mechanism for securing a ground line 420 to, for example, a threaded lug 422. In one implementation, ground line attachment portion 406 may include a crimp style connector for securing ground line 420 to lug 422. As shown in Fig. 4, lug 422 may be inserted into aperture 418 in conductive body 402 and secured using nut 424.

[0045] Embodiments described herein increase the efficiency with which work may be performed on a power line or switchgear component by providing an efficient means for grounding elbow connector 100 without requiring disassembly of the connector or replacement of the connector with a single-purpose grounding component. Rather, grounding link 200 is maintained within elbow connector 100 for use when needed. When grounding is not needed, insulated cap 300 may be reinstalled and power cable elbow connector assembly 100 may operate in a conventional manner.

[0046] Figs. 5A-5D are cross sectional/side view illustrations of another exemplary grounding link 500 consistent with embodiments described herein. In particular, Fig. 5A is a cross-sectional diagram illustrating an exemplary grounding link 500 and grounding element 504 in a pre-assembled configuration. Fig. 5B is a side view of grounding link 500 and grounding element 504 in an assembled configuration. Fig. 5C is a side view of grounding link 500 further illustrating (in cross-section) an exemplary insulating cap 503 positioned for assembly on grounding link 500. Fig. 5D is a side view of grounding link 500 and grounding element 504 showing insulating cap 503 installed on grounding interface end 518.

[0047] Consistent with embodiments described herein, grounding link 500, similar to grounding link 200 described above in relation to Figs. 2A-2C, includes a grounding element 504 positioned within a bore 505 in insulated body 506. Similar to grounding link 200 described above, grounding link 500 includes a bushing interface portion 508 for engaging second T-end in connector 100, a tap portion 510 for receiving an elbow connector or insulated cap, such as connector 150 and cap 170 illustrated in Figs. 1A-1C

and described above, and a cap receiving portion 512 for receiving an insulated cap, such as insulated cap 503 described below.

[0048] As shown in Fig. 5A, grounding element 504 includes a stud receiving end 516 and a grounding interface end 518. Grounding element 504 may be formed of a conductive material, such as brass, steel, or aluminum and, upon assembly, may conductively couple with power cable 106, bushing 112, and tap portion 510 via an integrated bus bar (not shown) similar to that described above in relation to Fig. 2A.

[0049] In one embodiment, stud receiving end 516 includes a threaded opening 520 for matingly engaging corresponding threads on a bushing, such as bushing 111 described above. However, in other embodiments, other means for coupling with the bushing may be incorporated, such as a push or snap-on connection, etc.

[0050] As shown in Fig. 5A, grounding interface end 518 includes a conductive body 530 having a ball end 531, designed to engage with a suitably sized ball socket clamp, such as ball socket clamp 600 described in relation to Fig. 6, below. Conductive body 530 of grounding interface end 518 includes a threaded portion 532 configured to engage an interior portion of cap 503, as described below, and a tool engaging portion 534 configured to enable grounding element 504 secure grounding link 500 to bushing 111 using, for example, a wrench or hexagonal socket. As shown in Fig. 5A, threaded portion 532 is positioned below tool engaging portion 534 (relative to ball end 531) and includes an outside diameter greater than an outside diameter of tool engaging portion 534.

[0051] In some embodiments, conductive body 530, ball end 531, threaded portion 532, and tool engaging portion 534 may be formed as one element of conductive material, such as copper, brass, steel, or aluminum. In other implementations, one or

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more of these components may be formed separately and secured to conductive body 530, such as via welding, etc.

[0052] During installation, grounding element 504 may be inserted within bore 505 in grounding link 500 between bushing interface portion 508 and cap receiving portion 512 grounding link 500, as shown in Fig 5B. Grounding link 500 is then inserted into bore 116 in second T-end 110 of connector 100. Threaded opening 520 in stud receiving end 516 in grounding element 504 may be threaded onto stud portion 122 of bushing 111. A suitable tool is then used to engage tool engaging portion 534 to secure grounding link 500 to elbow assembly 100.

[0053] When it is no longer necessary to ground connector 100, insulating cap 503 is installed over grounding interface end 518 and cap receiving portion 512 and secured via threaded portion 532 of grounding element 504, as shown in Fig. 5D and described below.

[0054] As shown in Fig. 5C, in one embodiment, insulated cap 503 includes an outer conductive or semi-conductive shield 536, an insulative inner housing 538, typically molded from an insulative rubber or epoxy material, a conductive or semi-conductive insert 540, and an engagement portion 542. Conductive or semi-conductive insert 540 is configured to surround ball end 531 of grounding interface end 518 when insulated cap 503 is installed on grounding link 500.

[0055] As shown in Figs. 5C and 5D, insulated cap 503 includes a substantially conical cavity 544 formed therein for receiving ball end 531 and second tapered portion 512 of grounding device 500. The conical configuration of cavity 544 generally corresponds to

the tapered configuration of cap receiving portion 512 to allow insulated cap 503 to become seated on grounding link 500 during installation.

[0056] As shown in Figs. 5C and 5D, engagement portion 542 may include internal threads 546 for engaging threaded portion 532 of grounding element 504. In one implementation, engagement portion 542 may be formed of a rigid material (e.g., plastic or metal) and may be press-fit into a recess formed into insert 540. In other embodiments, engagement portion 542 may be secured to insert 540 for other means, such as an adhesive, etc. During assembly, as shown in Fig. 5D, the threads 546 of engagement portion 542 of insulated cap 503 may be threaded into threaded portion 532 and tightened (e.g., by hand) to secure insulated cap 503 to grounding device 500.

[0057] Although not shown in Figs. 5A-5D, in some embodiments insulated cap 503 may include a voltage detection test point assembly, a test point cap, and/or a bailing assembly similar to those described above with respect to Figs. 1A-2.

[0058] It should be noted that, although Figs. 5A-5D depict grounding element 504 as a unitary/integrated element, in other implementations consistent with embodiments described herein, these elements may be formed as discrete core and interface end components, secured together in any suitable manner, such as a threaded interface, welding, snap or push-on, etc.

[0059] Fig. 6 is a side view of an exemplary ball socket clamp 600 for use with the embodiment described in Figs. 5A-5D above. As shown, ball socket clamp 600 includes a conductive body 602, a clamping member 604, and a ground line attachment portion 606. Conductive body 602 may be formed of a conductive metal, such as brass or aluminum and may include a socket portion 608 formed therein for receiving ball end

531 of grounding element 504. For example, a width "W2" may be substantially similar, yet slightly larger than an outside diameter of ball end 531. With such a configuration, socket portion 608 may easily slip onto exposed ball end 531 following installation of grounding link 500 into elbow connector 100.

[0060] As shown in Fig. 6, conductive body 602 may include a threaded aperture 610 for receiving clamping member 604, such that clamping member 604 is positioned in clamping relation to socket portion 608. Clamping member 604, in one exemplary embodiment, includes a generally cylindrical, threaded body 612 having a tool engaging portion 614 on one end and a ball engaging portion (not shown) on an opposing end, distal from tool engaging portion 614. During assembly of ball socket clamp 600, body 612 is threaded through aperture 610 such that the ball engaging portion engages ball end 531 of grounding element 504.

[0061] During connection of ball socket clamp 600 to grounding element 504, socket portion 608 of conductive body 602 is placed over exposed ball end 531 of grounding element 504. Tool engaging portion 614 of clamping member 604 is then rotated, e.g., using a lineman's hook, causing the ball engaging portion to travel toward socket portion 608, thus securing ball end 531 within ball socket clamp 600.

[0062] As shown in Fig. 6, conductive body 602 of ball socket clamp 600 also includes an aperture 618 for receiving ground line attachment portion 606. Ground line attachment portion 606 may include a mechanism for securing a ground line 620 to, for example, a threaded lug 622. In one implementation, ground line attachment portion 606 may include a crimp style connector for securing ground line 620 to lug 622. Lug 622 may be inserted into aperture 618 in conductive body 602 and secured using nut 624.

[0063] The foregoing description of exemplary implementations provides illustration and description, but is not intended to be exhaustive or to limit the embodiments described herein to the precise form disclosed. Modifications and variations are possible in light of the above teachings or may be acquired from practice of the embodiments. For example, although grounding element 504 of grounding link 500 has been illustrated and described in terms of ball end 531, and grounding element 216 of grounding link 200 has been illustrated and described in terms of a cylindrical, clamp engaging end 234, in other embodiments difference configurations may be implemented in a manner consistent with the described features. For example, different configurations of clamp engaging surfaces may be implemented.

[0064] Implementations may also be used for other devices, such as other high voltage switchgear equipment, such as any 15 kV, 25 kV, or 35 kV equipment. For example, various features have been mainly described above with respect to elbow power connectors. In other implementations, other medium/high voltage power components may be configured to include the grounding assemblies described herein, such as yokes, taps, etc.

[0065] Although the invention has been described in detail above, it is expressly understood that it will be apparent to persons skilled in the relevant art that the invention may be modified without departing from the spirit of the invention. Various changes of form, design, or arrangement may be made to the invention without departing from the spirit and scope of the invention. Therefore, the above-mentioned description is to be considered exemplary, rather than limiting, and the true scope of the invention is that defined in the following claims.

[0066] No element, act, or instruction used in the description of the present application should be construed as critical or essential to the invention unless explicitly described as such. Also, as used herein, the article "a" is intended to include one or more items. Further, the phrase "based on" is intended to mean "based, at least in part, on" unless explicitly stated otherwise.

WHAT IS CLAIMED IS:

1. An electrical connector assembly, comprising:
 - a connector body comprising:
 - a conductor receiving end;
 - a first connector end formed substantially perpendicularly to an axial direction of the conductor receiving end,
 - wherein the first connector end includes a first axial bore configured to receive a bushing element therein; and
 - a second connector end formed substantially perpendicularly to the axial direction of the conductor receiving end and opposing the first connector end,
 - wherein the second connector end includes a second axial bore formed therein; and
 - a grounding link having a bushing interface portion, a cap receiving portion, and a tap portion,
 - wherein the grounding link further includes a grounding element extending between the bushing interface portion and a cap receiving portion,
 - wherein the bushing interface portion of the grounding link is configured for insertion into the second axial bore of the second connector end,
 - wherein the grounding element includes an exposed portion projecting above a surface of the grounding link,
 - wherein the exposed portion of the grounding element is configured for attachment by a grounded hot line clamp to ground the electrical connector assembly; and
 - wherein the tap portion is configured for receipt of a elbow connector.

2. The electrical connector assembly of claim 1, wherein the second axial bore in the second connector end includes a tapered configuration, and

wherein the bushing interface portion of the grounding link includes a correspondingly tapered configuration for engaging the tapered configuration of the second axial bore.

3. The electrical connector assembly of claim 2, wherein the exposed portion of the grounding element projects from a surface of cap receiving portion of the grounding link, wherein the cap receiving portion includes a tapered configuration.

4. The electrical connector assembly of claim 3, wherein the exposed portion of the grounding element comprises a generally cylindrical configuration for engaging clamping members of the hot line clamp.

5. The electrical connector assembly of claim 4, wherein the exposed portion comprises a multi-function bore formed axially therein,

wherein the multi-function bore includes a grounding link attachment portion, and wherein, following insertion of the bushing interface portion of the grounding link into the second bore of the second connector end, the grounding link is secured within the second bore by application of a tool within the grounding link attachment portion of the multi-function bore.

6. The electrical connector assembly of claim 5, further comprising:
an insulated cap configured to cover the exposed portion of the grounding element when the electrical connector is in a non-grounded configuration.
7. The electrical connector assembly of claim 6, wherein the insulated cap comprises an insulated body and a securing element,
wherein the insulated body of the insulated cap comprises a tapered cavity therein for receiving the second end of the insulated body of the grounding link,
wherein the securing element of the insulated cap projects within the tapered cavity,
wherein the multi-function bore includes a second cap-securing portion, and
wherein, upon placement of the tapered cavity of the insulated cap on the tapered second end of the grounding link, the securing element is configured to engage the cap-securing portion of the multi-function bore.
8. The electrical connector assembly of claim 7, wherein the securing element comprises a threaded stud and wherein the cap-securing portion of the multi-function bore comprises a correspondingly threaded portion of the multi-function bore.
9. The electrical connector assembly of claim 4, wherein the exposed portion of the grounding element comprises a ball configuration for engaging a ball socket in the hot line clamp.

10. The electrical connector assembly of claim 9, wherein the exposed portion of the grounding element comprises a tool engaging portion and a cap securing portion,

wherein, following insertion of the grounding link into the second bore of the second connector end, the grounding element is secured within the second bore by application of a tool to the tool engaging portion.

11. The electrical connector assembly of claim 2, wherein the grounding element comprises a second end for securing the grounding element and the grounding link to a bushing.

12. The electrical connector assembly of claim 1, wherein the connector body comprises a 600 amp connector and wherein the tap interface portion comprises a reducing tap interface portion for provided a 200 amp interface to the 600 amp connector.

13. A medium or high voltage power cable elbow connector assembly, comprising:

a connector body having a conductor receiving end, a bushing receiving end projecting substantially perpendicularly from the connector body, and a connection end projecting substantially perpendicularly from the connector body and oriented substantially opposite to the bushing receiving end,

wherein the connector body includes a first axial bore that communicates with each of a second axial bore and a third axial bore in the bushing receiving and connection ends, respectively, and

wherein the bushing receiving end is configured to receive a switchgear bushing therein;

a grounding link configured for insertion into the third axial bore of the connection end,

wherein the grounding link is configured to conductively connect to the switchgear bushing,

wherein the grounding link includes each of a cap receiving portion and a reducing tap portion, wherein the cap receiving portion is aligned with a bushing interface portion configured for insertion into the third axial bore;

a grounding element configured for insertion within a bore in the grounding link to conductively couple with the switchgear bushing in the third axial bore, wherein the grounding element comprises an exposed portion for engaging a grounded hot line clamp, during grounding of the electrical connector assembly,

wherein the reducing tap portion of the grounding link is configured to receive a elbow connector having a reduced amperage; and

an insulated cap configured to cover the exposed conductive portion of the grounding device during normal operation of the electrical connector.

14. The medium or high voltage power cable elbow connector assembly of claim 13, wherein the exposed conductive portion of the grounding device comprises one of a cylindrical or ball configuration.

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15. The medium or high voltage power cable elbow connector assembly of claim 13, wherein the exposed portion of the grounding element comprises a generally cylindrical configuration for engaging clamping members of the hot line clamp.

16. The medium or high voltage power cable elbow connector assembly of claim 15, wherein the exposed portion comprises a multi-function bore formed axially therein, wherein the multi-function bore includes a grounding link attachment portion, and wherein, following insertion of the bushing interface portion of the grounding link into the third axial bore, the grounding link is secured within the third axial bore by application of a tool within the grounding link attachment portion of the multi-function bore.

17. The electrical connector assembly of claim 13, wherein the connector body comprises a 600 amp connector and wherein the reducing tap portion comprises a 200 amp tap interface to the 600 amp connector.

18. A method, comprising:
connecting a bushing interface of a power cable elbow connector to a switchgear bushing,

wherein the power cable elbow connector further comprises a connector body for receiving a power cable therein, and a connector end projecting from the connector body oppositely from the bushing interface,

wherein the connector end includes an axial bore therein;

inserting a grounding link into the axial bore in the connector end,
wherein the grounding link includes an insulated body, a tap portion, and a cap receiving portion, and wherein the grounding link comprises a grounding element extending therethrough,

wherein the grounding element is configured to couple with the bushing in the bushing interface and further includes an exposed conductive portion projecting from the cap receiving portion;

installing a first insulated cap over the exposed conductive portion of the grounding link;

installing a reduced amperage elbow connector onto the tap portion of the grounding link;

energizing the power cable elbow connector;

de-energizing the power cable elbow connector;

removing the reduced amperage elbow connector from the tap portion of the grounding link;

installing a second insulated cap onto the tap portion;

removing the first insulated cap from the exposed conductive portion of the grounding link; and

attaching a hot line clamp to the exposed conductive portion of the grounding link,

wherein the hot line clamp is coupled to a ground line to ground the power cable elbow connector.

19. The method of claim 18, wherein the first insulated cap further comprises a voltage test point, the method further comprising:

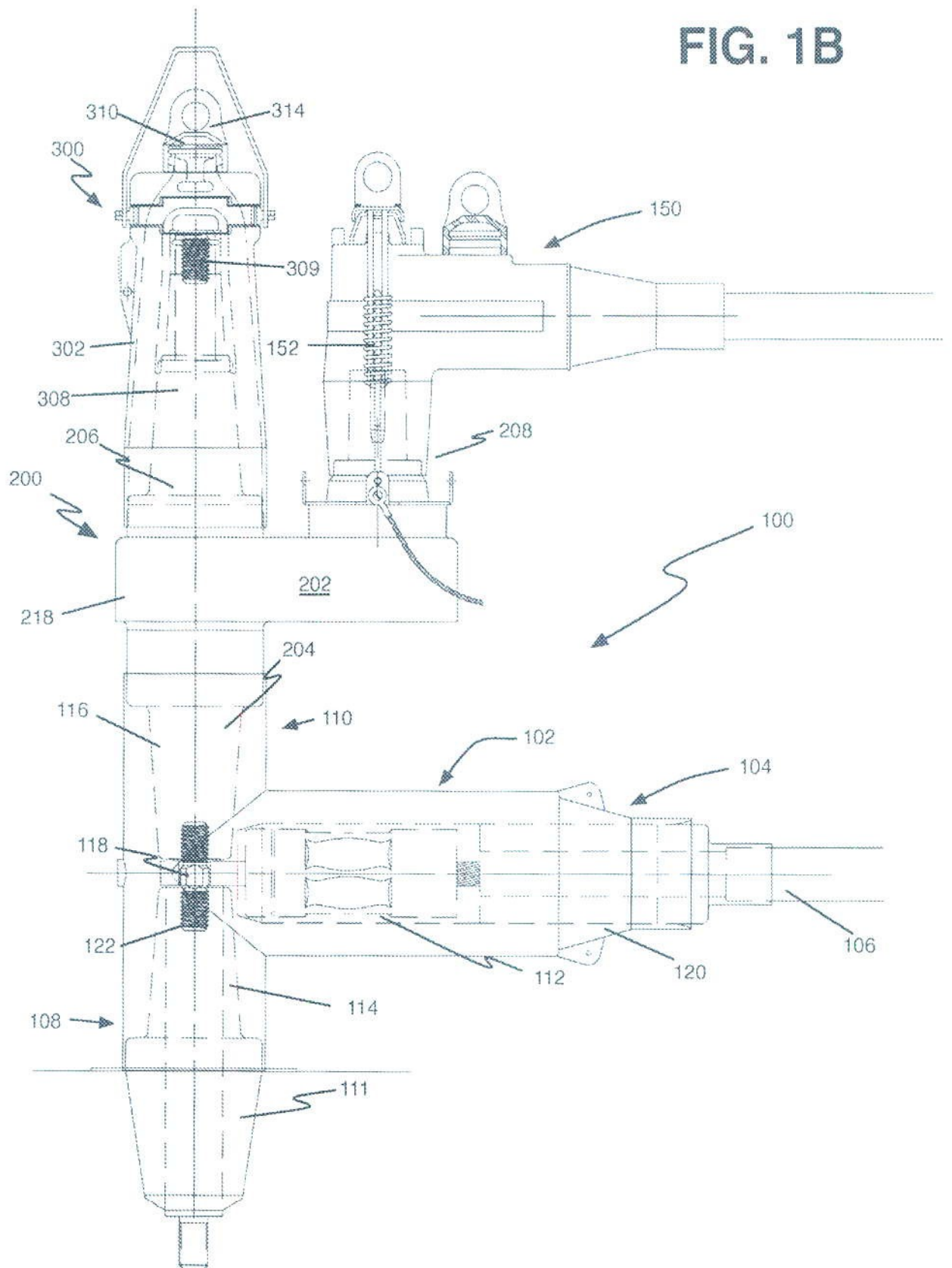
testing a voltage of the power cable electrical connector via the voltage test point in the first insulated cap to determine whether the power cable elbow connector has been de-energized; and

removing the first insulated cap when it is determined that the power cable elbow connector has been de-energized.

ABSTRACT

A grounding link for use with an elbow-type power cable electrical connector. The grounding link includes a bushing interface portion, a cap receiving portion, and a tap portion, wherein the grounding link further includes a grounding element extending between the bushing interface portion and a cap receiving portion, and wherein the bushing interface portion of the grounding link is configured for insertion into a bore in elbow-type power cable electrical connector. The grounding element includes an exposed portion projecting above a surface of the grounding link, wherein the exposed portion of the grounding element is configured for attachment by a grounded hot line clamp to ground the electrical connector assembly. The tap portion is configured for receipt of a second elbow connector to conductively couple the second elbow connector to the elbow-type power cable electrical connector.

FIG. 1B



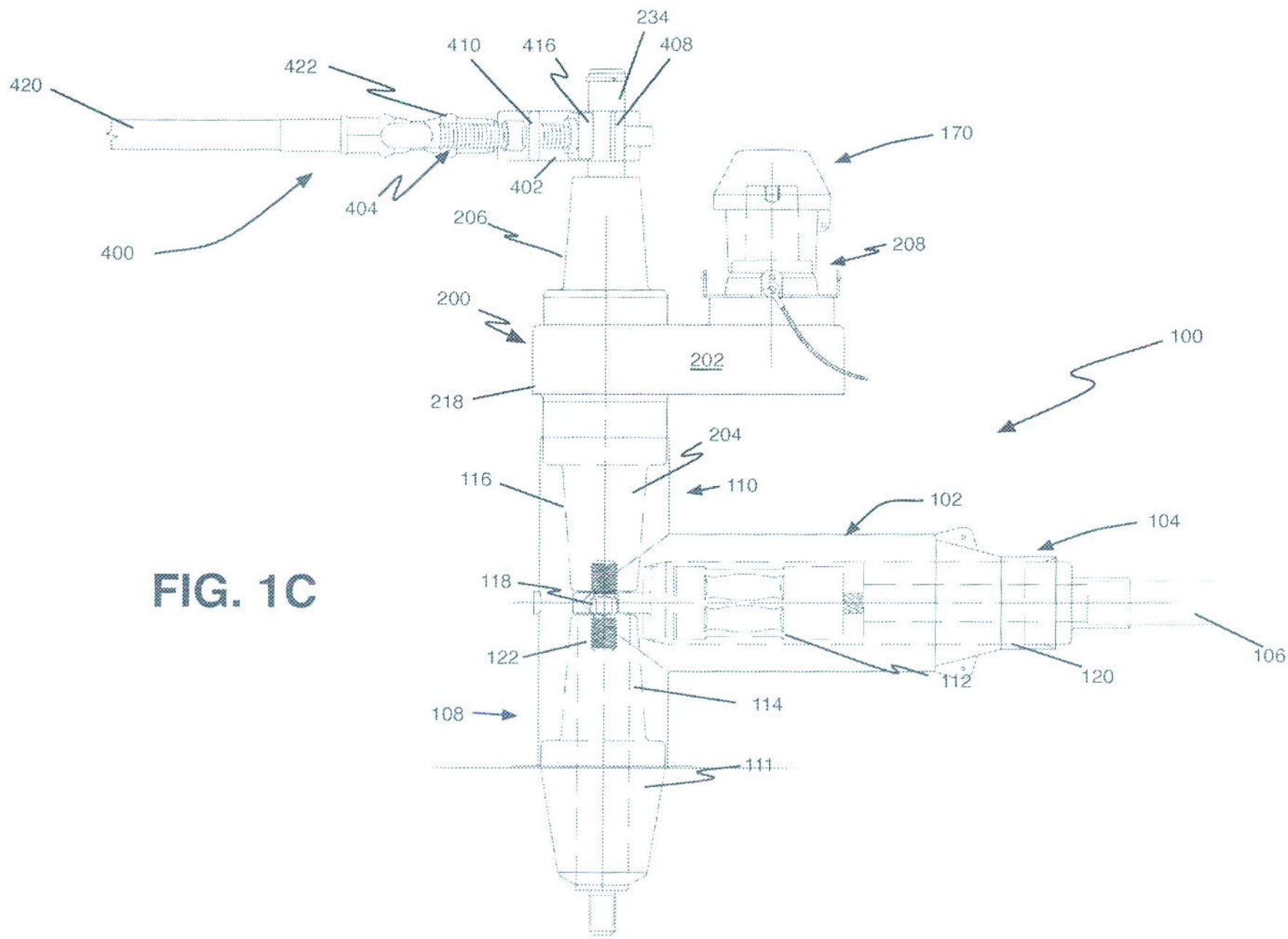
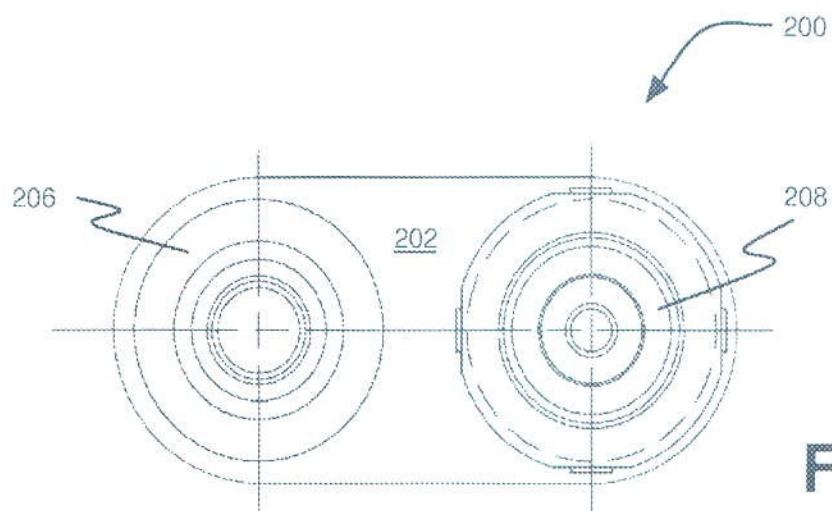
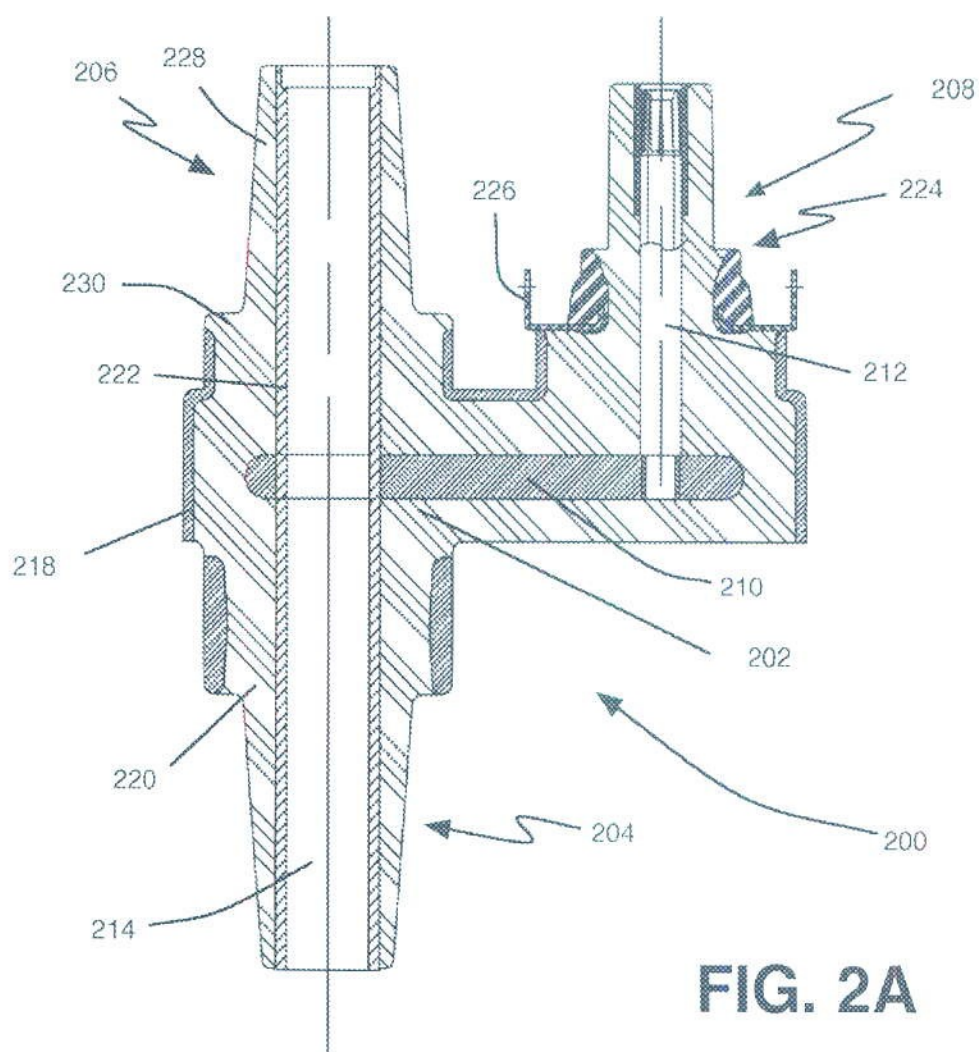
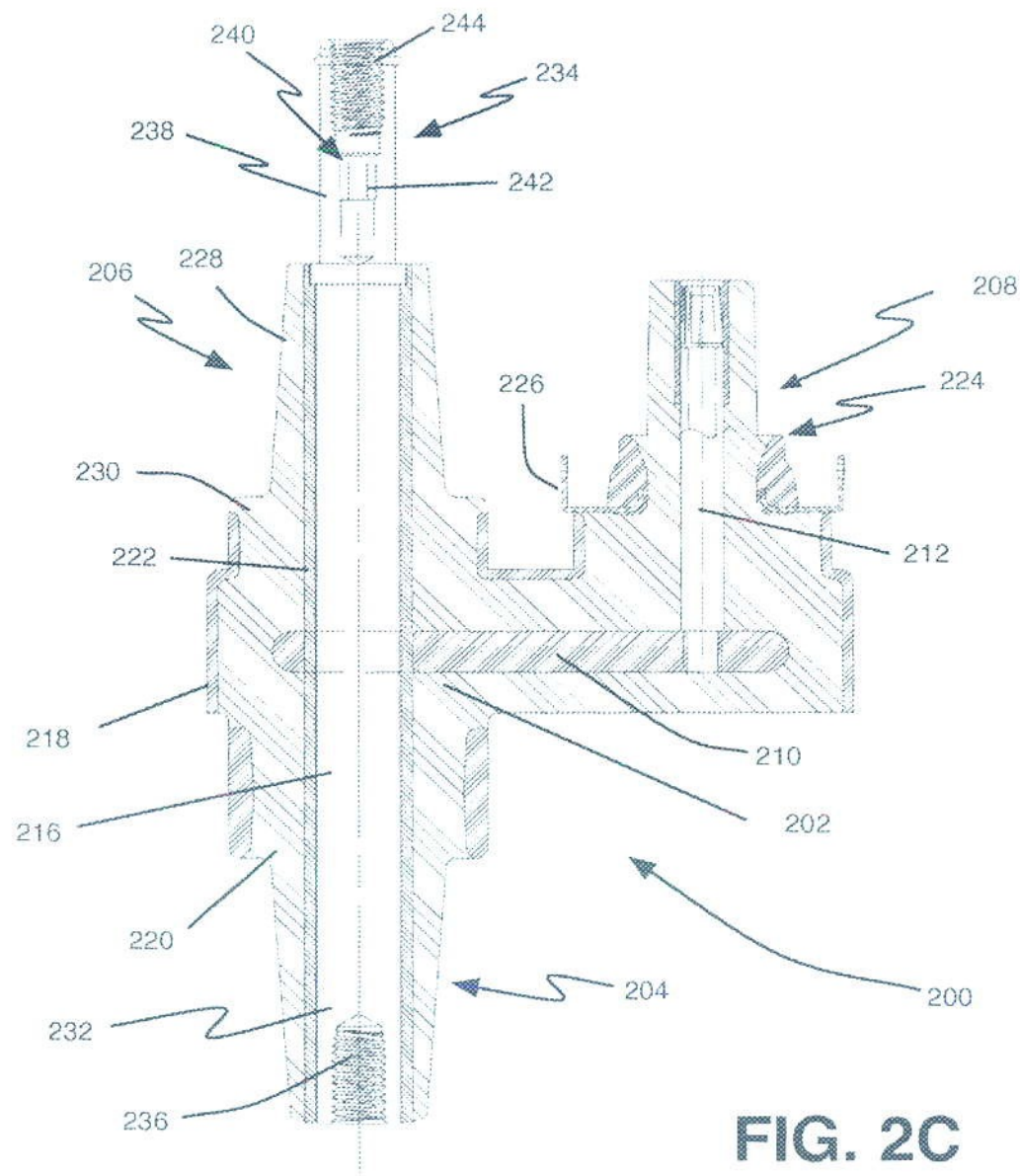


FIG. 1C

**FIG. 2B****FIG. 2A**

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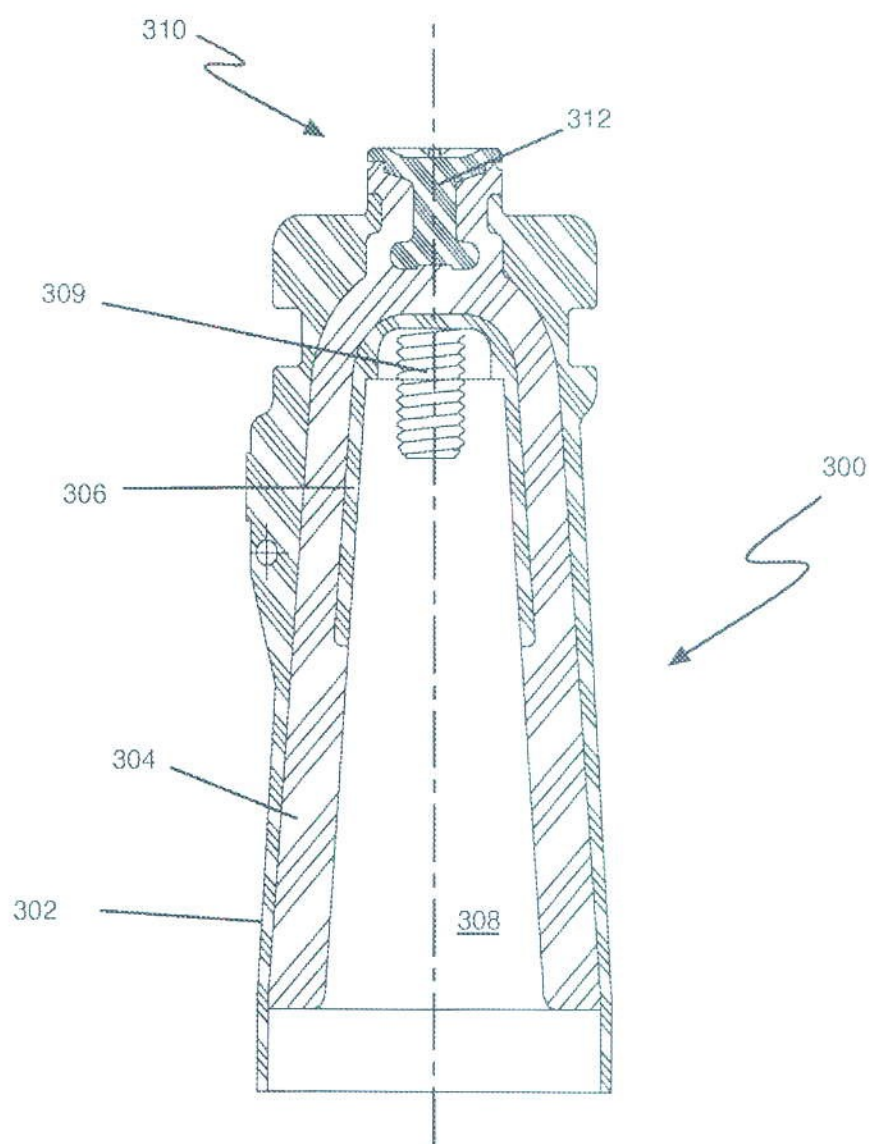
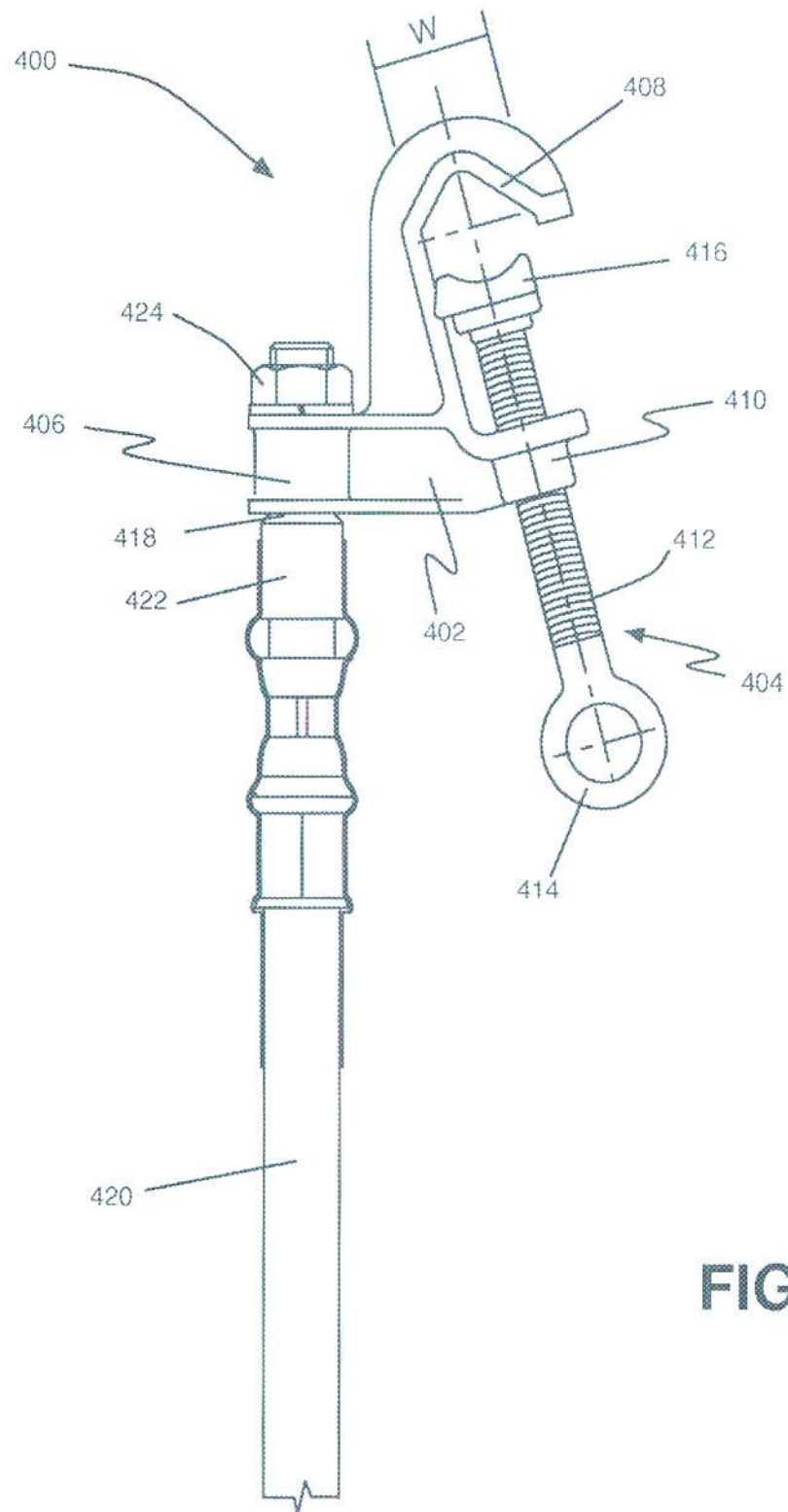
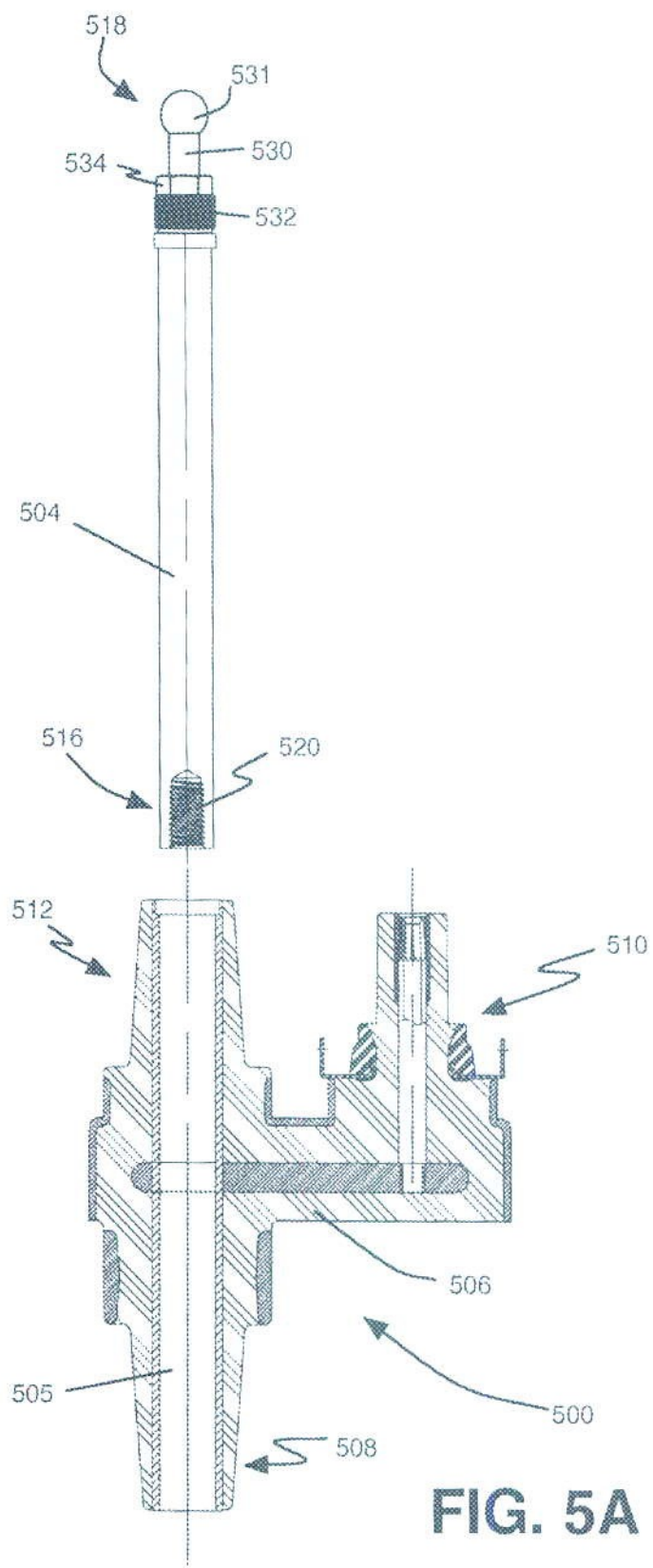
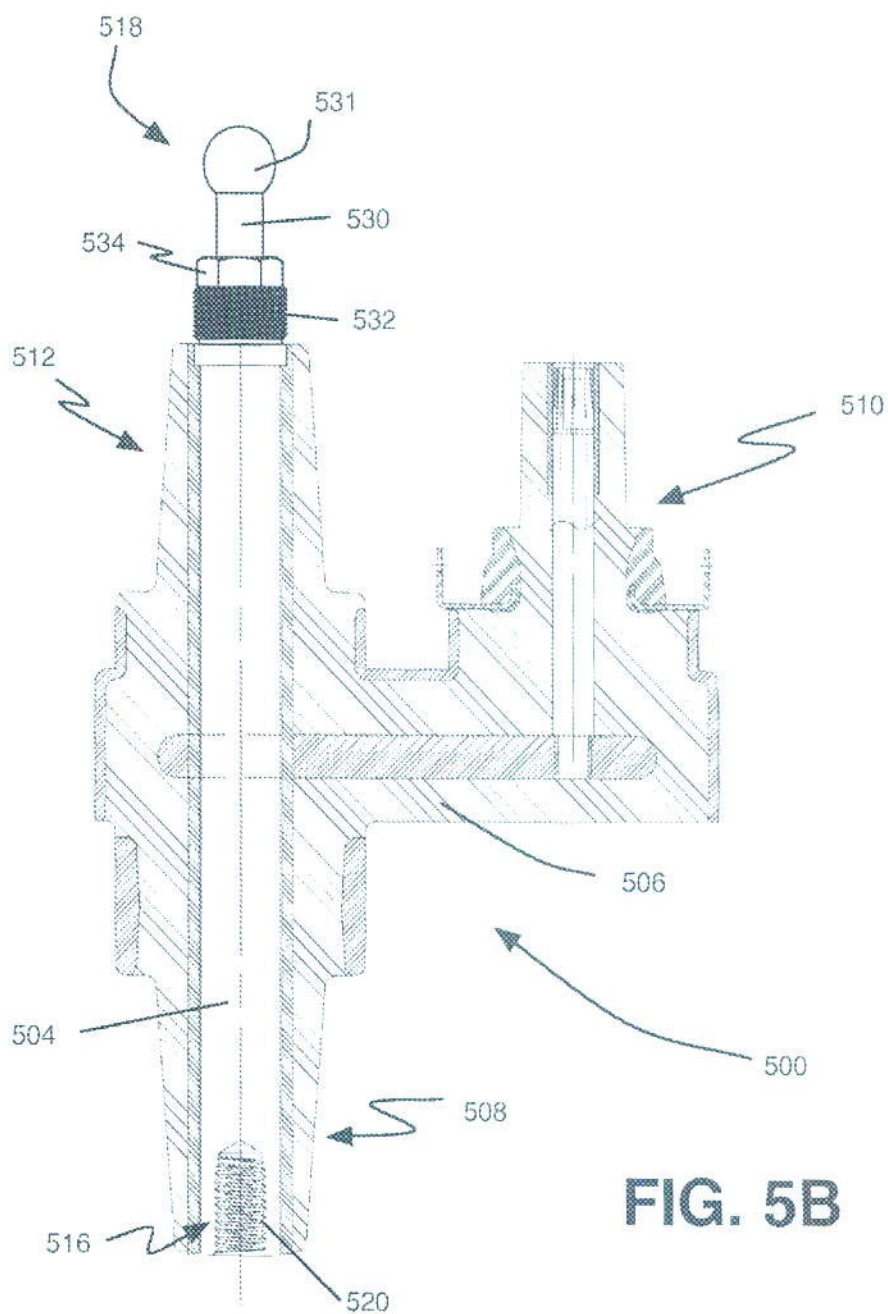


FIG. 3

**FIG. 4**





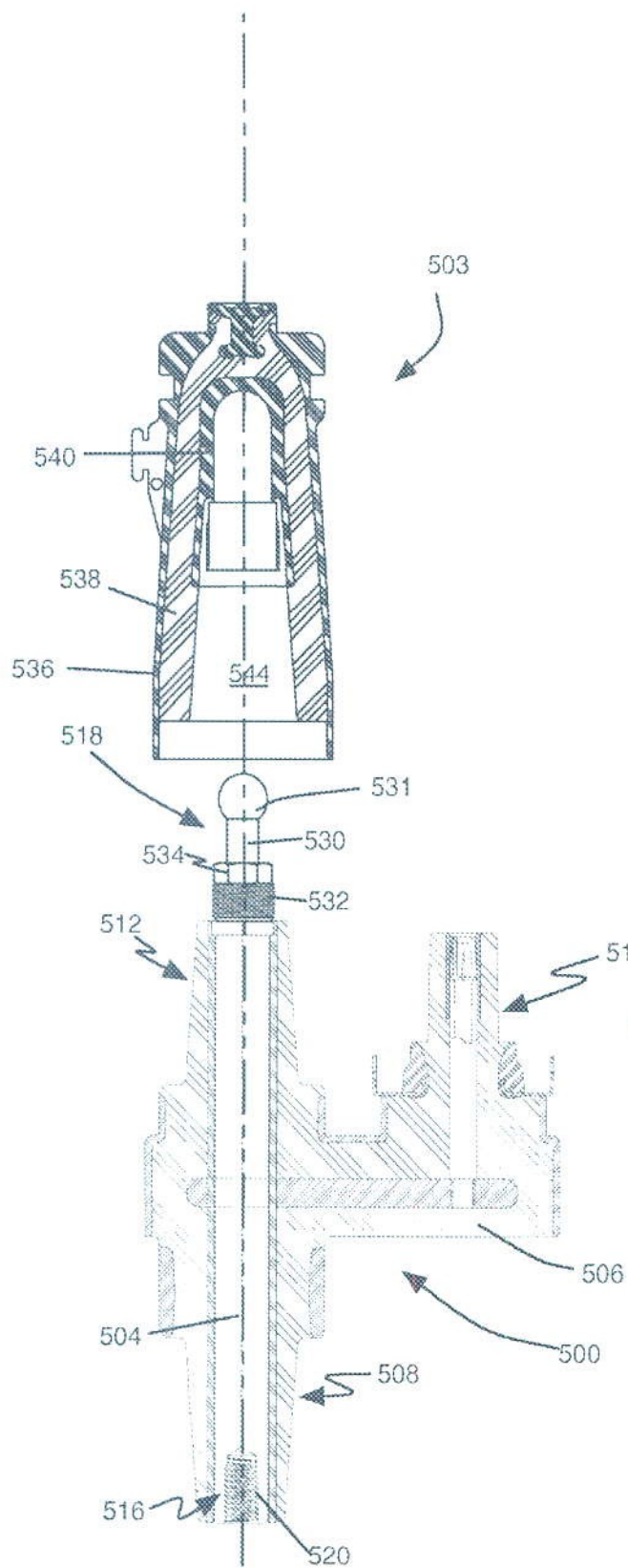


FIG. 5C

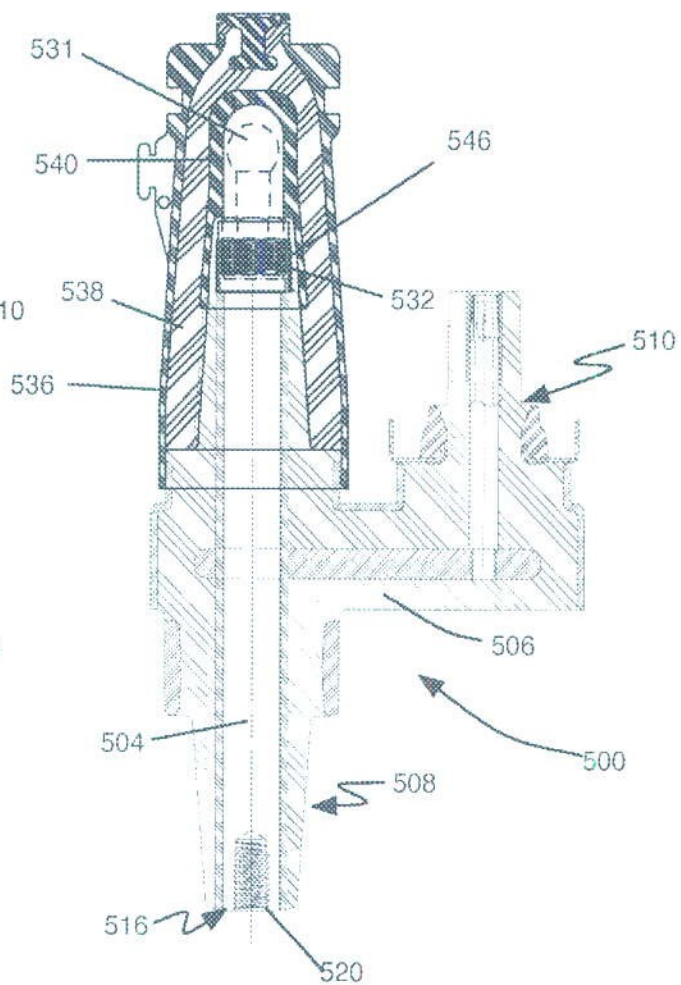


FIG. 5D

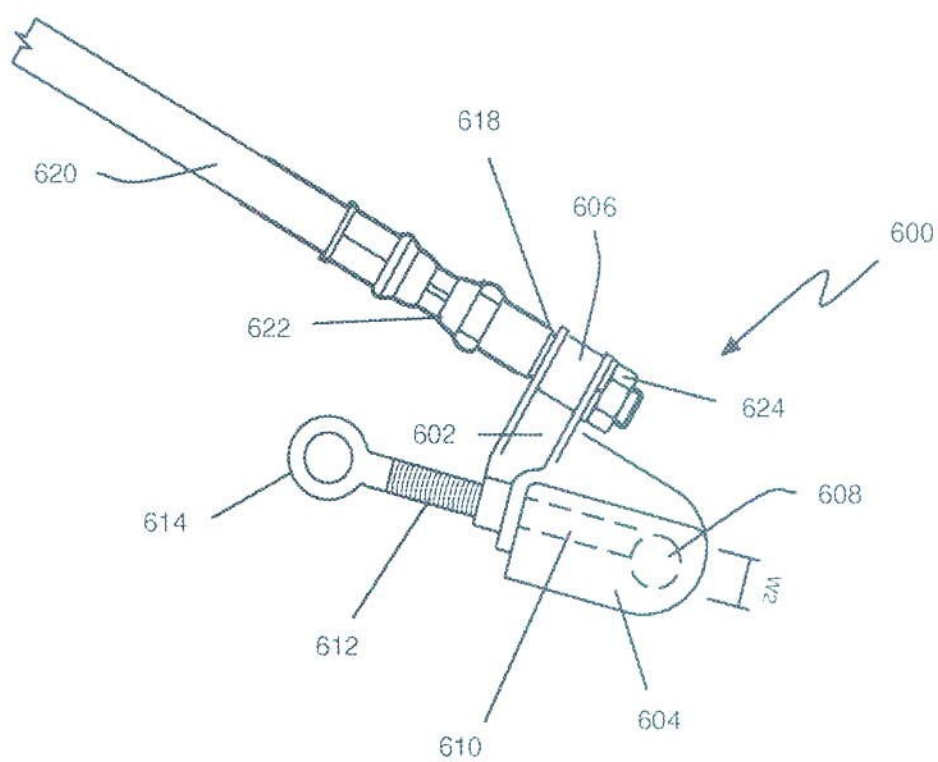


FIG. 6

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TRADUCCIÓN SIMPLE AL ESPAÑOL REALIZADA POR SHARON BENREY
PACHECO DE UN DOCUMENTO ESCRITO ORIGINALMENTE EN INGLÉS.

LOS ESTADOS UNIDOS DE AMÉRICA
A TODOS LOS QUE LA PRESENTE VIEREN, SABED:
DEPARTAMENTO DE COMERCIO DE LOS ESTADOS UNIDOS
Oficina de Marcas y Patentes de los Estados Unidos

02 de noviembre de 2015

POR MEDIO DE LA PRESENTE SE CERTIFICA QUE EL DOCUMENTO QUE FIGURA EN ANEXO ES UNA COPIA FIEL TOMADA DE LOS ARCHIVOS DE LA OFICINA DE MARCAS Y PATENTES DE LOS ESTADOS UNIDOS, DE AQUELLOS DOCUMENTOS DE LA SOLICITUD DE PATENTE IDENTIFICADA A CONTINUACIÓN QUE CUMPLIÓ CON LOS REQUISITOS PARA OTORGÁRSELE UNA FECHA DE PRESENTACIÓN BAJO 35 U.S.C 111.

NÚMERO DE SOLICITUD: *62/080.496*

FECHA DE PRESENTACIÓN: *17 de noviembre de 2014*

EL CÓDIGO DEL PAÍS Y EL NÚMERO DE SU SOLICITUD DE PRIORIDAD, A USARSE PARA LA PRESENTACIÓN EN EL EXTRANJERO BAJO LA CONVENCIÓN DE PARÍS, ES *US62/080.496*

Con autorización del
Subsecretario de Comercio para la Propiedad Intelectual
y Director de la Oficina de Marcas y Patentes de los Estados Unidos

[Firma ilegible]
JOHN A BURSON
Oficial de Registro

Sello: OFICINA DE MARCAS Y PATENTES DE LOS ESTADOS UNIDOS.
DEPARTAMENTO DE COMERCIO

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SOPORTE DE ACUSE DE RECIBO ELECTRÓNICO

Número/identificador único en el Sistema de Presentación Electrónica (EFS ID):	20710732				
Número de Solicitud:	62080496				
Número de Solicitud internacional:					
Número de Confirmación:	8771				
Título de la Invención:	ENLACE A TIERRA PARA MECANISMO DE CONECTOR ELÉCTRICO				
Primer Inventor Nombrado/Nombre del Solicitante:	Larry N. Siebens				
Número de Cliente:	83544				
Declarante:	Robin Clark/gosia ruszkowska-noon				
Declarante autorizado por:	Robin Clark				
Número de expediente de Abogado:	0067-0172PR				
Fecha de Recibo:	17-NOV-2014				
Fecha de Presentación:					
Sello de Tiempo:	12:11:26				
Tipo de Solicitud:	Provisional				
formación de Pago:					
Entregado con el Pago	Si				
Tipo de Pago	Tarjeta de crédito				
El pago fue recibido con éxito en RAM	\$ 260				
Número de confirmación RAM	9494				
Cuenta de depósito					
Usuario Autorizado					
Listado del Archivo:					
Número del Documento	Descripción del Documento	Nombre del Archivo	Tamaño del Archivo (bytes)/Síntesis del mensaje	Múltiples partes/.zip	Páginas (si aplica)
1		TB2592_Provisional_Application_0067_0172PR.pdf	108377	Si	27
			601373b3ff342233039d582fa4865550f63f4d2f6		
	Descripción de multipartes/Archivos PDF en descripción .zip				
	Descripción del documento			Inicio	Fin
	Descripción			1	18

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	Reivindicaciones			19	26
	Resumen			27	27
Avisos:					
Información:					
2	Dibujos- solamente dibujos en línea blanco y negro	TB2592_Provisional_Drawin gs_0067_0172PR.pdf	957755	no	11
			D12f70c8884d1c384547 dc1bab9608ab0d9c8ab1		
Avisos:					
Información:					
3	Transmisión de la nueva solicitud	TB2592_Transmittal_0067_0 172P.pdf	67528	no	1
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Avisos:					
Información:					
4	Portada provisional (SB16)	TB2592_Provisional_Cover_ Sheet_0067_0172PR.pdf	301144	no	3
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Avisos:					
Esta no es una portada del formulario SB16 provisional proporcionada por la USPTO					
Información:					
5	Hoja de cálculo de tarifa (SB06)	fee-info.pdf	29613	no	2
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Avisos:					
Información:					
Tamaño Total del Archivo (en bytes):				1464417	

Este soporte de acuse de recibo prueba la recepción, en la fecha señalada por la USPTO, de los documentos que se indican, descritos por el solicitante, y que incluyen el recuento de páginas, cuando sea el caso. Sirve como evidencia de recepción, similar a una tarjeta postal, tal y como se describe en MPEP 503.

Solicitudes nuevas de conformidad con 35 U.S.C. 111

Si se está presentando una nueva solicitud, y la solicitud incluye los componentes necesarios para una fecha de presentación (véase 37 CFR 1.53 (b)-(d) y MPEP 506), en su momento, se expedirá un Recibo de Presentación (37 CFR 1.54) y la fecha señalada en este soporte de acuse de recibo establecerá la fecha de presentación de la solicitud.

Fase nacional de una Solicitud Internacional de conformidad con 35 U.S.C. 371

Si una entrega oportuna cumple con las condiciones de 35 U.S.C. 371 y otros requisitos correspondientes para entrar en la fase nacional de una solicitud internacional, en su momento, se expedirá un formato PCT/DO/EO/903 indicando la aceptación de la solicitud como una presentación a fase nacional de conformidad con 35 U.S.C. 371, junto con el Soporte de Presentación.

Nueva Solicitud Internacional Presentada ante la USPTO como Oficina Receptora

Si se está presentando una nueva solicitud internacional, y la solicitud internacional incluye los componentes necesarios para una fecha de presentación internacional (véase artículo 11 de la PCT y MPEP 1810), en su momento, se expedirá una Notificación del Número de Solicitud Internacional y de la fecha de presentación internacional (formato PCT/RO/105), sujeto a prescripciones concernientes a la seguridad nacional, y la fecha mostrada en este soporte de acuse de recibo establecerá la fecha de presentación internacional de la solicitud.

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PTO/SB/16 (03-13)

Aprobado para usarse hasta el 31/01/2014. OMB 0651-0032

Oficina de Marcas y Patentes de los EE.UU. DEPARTAMENTO DE COMERCIO

Bajo la ley de reducción de trámites de 1995, ninguna persona está obligada a responder a una recolección de información a menos que muestre un número de control OMB válido

SOLICITUD PROVISIONAL PARA PORTADA DE PATENTE – Página 1 de 2

Esta es una solicitud para presentar una SOLICITUD PROVISIONAL PARA PATENTE bajo 37 CFR 1.53(c)
Etiqueta de correo expreso No. _____

INVENTOR(ES)		
Nombre (primer y segundo [si los hay])	Apellido	Residencia (Ciudad y tanto Estado o país extranjero)
Larry N.	Siebens	Asbury, NJ
Alan D.	Borgstrom	Hackettstown, NJ
Los inventores adicionales se están nombrando la _____ hojas enumeradas separadas adjuntas a este documento.		
TÍTULO DE LA INVENCIÓN (500 caracteres máx):		
ENLACE A TIERRA PARA MECANISMO DE CONECTOR ELÉCTRICO		
Enviar toda la correspondencia a: DIRECCIÓN DE CORRESPONDENCIA		
☒ La dirección correspondiente al Número de cliente 83544 ☐ o ☐ Firma o nombre individual		
Dirección		
Ciudad	Estado	Zip
País	Teléfono	Correo Electrónico
PARTES DE LA SOLICITUD ADJUNTAS (marque todas las que apliquen)		
☐ Hoja de datos de la solicitud. Ver 37 CFR 1.76. ☐ CD(s), número de CDs _____		
☒ Dibujo(s) <i>Número de hojas</i> 11 ☐ Otro (especifique) _____		
☒ Descripción (por ejemplo, descripción de la invención) <i>Número de páginas</i> 27		
Tarifas adeudadas: Una tarifa de \$260 (\$130 para pequeña entidad) (\$65 para micro entidad). Si la descripción y los dibujos exceden las 100 hojas de papel, también se adeuda una tarifa de tamaño de la solicitud, que es "400 (\$200 para pequeña entidad) (\$100 para micro entidad) para cada 50 hojas adicionales o fracción de las mismas. Ver 35U.S.C. 41(a)(1)(G) y 37 CFR 1.16(s).		
MÉTODO DE PAGO DE LA TARIFA DE PRESENTACIÓN Y LA TARIFA DE TAMAÑO DE LA SOLICITUD PARA ESTA SOLICITUD PROVISIONAL PARA PATENTE		

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- ☐ El solicitante afirma estado de una entidad pequeña. Ver 37 CFR 1.27
- ☐ El solicitante certifica estado de micro entidad. Ver 37 CFR 1.29
- El solicitante debe adjuntar el formato PTO/SB/15A o B o equivalente. 260.00
- Cantidad total de la tarifa (\$)**
- ☐ Se adjunta un cheque o giro postal pagadero al *Director de la Oficina de Marcas y Patentes de los Estados Unidos* para cubrir la tarifa de presentación y la tarifa de tamaño de la solicitud (si aplica).
- ✓ Pago con tarjeta de crédito. Se adjunta formato PTO-2038
- ✓ Por la presente, el Director está autorizado a cargar la tarifa de presentación y la tarifa de tamaño de la solicitud (si aplica) o acreditar otro pago adicional al Número de Cuenta de Depósito: 50-4752

USO EXCLUSIVO PARA PRESENTAR UNA SOLICITUD PROVISIONAL PARA PATENTE

Esta recolección de información se requiere por 37 CFR 1.51. Se necesita esta información para obtener o conservar un beneficio por parte del público que presentará (y por la USPTO para procesar) una solicitud Confidencialmente se rige por 35 U.S.C. 122 Y 37 CFR 1.11 y 1.14. Esta recolección se estima que tome 10 horas para ser completada, incluyendo la recolección, preparación y presentación del formato de solicitud completo a la USPTO. El tiempo variará dependiendo de cada caso en particular. Cualquier comentario sobre la cantidad de tiempo que necesita para completar este formulario y/o sugerencias para reducir los mismos, deberá enviarse al Director de Información, Oficina de Marcas y Patentes de los EE.UU., Departamento de Comercio de los EE.UU., apartado aéreo 1450, Alexandria, VA 22313-1450. NO ENVÍE TARIFAS O FORMULARIOS COMPLETOS A ESTA DIRECCIÓN. **ENVÍELOS A: Comisionado de Patentes, apartado aéreo 1450, Alexandria, VA 22313-1450.**

Si necesita asesoría completando el formulario llame 1-800-PTO-9199 y seleccione la opción 2.

PTO/SB/16 (03-13)

Aprobado para usarse hasta el 31/01/2014. OMB 0651-0032

Oficina de Marcas y Patentes de los EE.UU. DEPARTAMENTO DE COMERCIO

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SOLICITUD PROVISIONAL PARA PORTADA DE PATENTE – Página 2 de 2

La invención se realizó por una agencia del Gobierno de los Estados Unidos o bajo un contrato con una agencia del Gobierno de los Estados Unidos.

✓ No.

☐ Si, la invención fue hecha por una agencia del Gobierno de los EE.UU. El nombre de la agencia del Gobierno de los EE.UU. es _____

☐ Si, la invención se realizó bajo un contrato con una agencia del Gobierno de los EE.UU. El nombre de la agencia del Gobierno de los EE.UU. y el número de contrato del Gobierno son: _____

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El solicitante se le advierte evitar presentar información personal en los documentos presentados en una solicitud de patente que pueda contribuir al robo de identidad. La información personal tal como números de seguridad social, números de cuentas bancarias o números de tarjetas de crédito (diferentes a un cheque o un formato de autorización de tarjeta de crédito PTO-2038 presentado para fines de pagos) nunca serán requeridos por parte de la USPTO para apoyar una petición o una solicitud. Si este tipo de información personal se incluye en documentos presentados a la USPTO, los solicitantes deben considerar disociar dicha información personal de los documentos antes de presentarlos a la USPTO. Se le advierte al solicitante, que el registro de una solicitud de patente está disponible al público después de la publicación de la solicitud (a menos que se haga una solicitud de no publicación de acuerdo con 37 CFR 1.213 (a)) o la expedición de una patente. Además, el registro de una solicitud abandonada puede estar disponible también al público si la solicitud se referencia en una solicitud publicada o una patente expedida (ver 37 CFR 1.14). Los formularios de autorización de cheques y tarjetas de crédito PTO-2038 presentadas para fines de pagos no se conservan en el archivo de la solicitud y por lo tanto no son públicos.

FIRMA /Robin C. Clark, Reg. No. 40.956/
NOMBRE EN LETRA IMPRENTA Robin C. Clark

FECHA 17 de noviembre de 2014

REGISTRO NO. 40.956

(si es aplicable)

TELÉFONO 571-297-0007

NÚMERO DE EXPEDIENTE 0067-0172PR

Declaración de Ley de Privacidad

La Ley de Privacidad de 1974 (P.L. 93-579) exige que se le dé cierta información en relación con su presentación del formato adjunto relacionado con una solicitud de patente o patente. En consecuencia, de conformidad con los requerimientos de la Ley, por favor tenga en cuenta que: (1) la autoridad general para la recolección de esta información es 35 U.S.C. 2(b) (2); (2) la entrega de la información solicitada es voluntaria; y (3) el propósito principal para el cual se usa la información por parte de la Oficina de Marcas y Patentes de los EE.UU. es procesar y/o examinar su comunicación relacionada a una solicitud de patente o patente. Si usted no suministra la información solicitada, la Oficina de Marcas y Patentes de los EE.UU. no podrá procesar y/o examinar su comunicación, lo que puede resultar en la finalización de las actuaciones o el abandono de la solicitud o el vencimiento de la patente.

La información proporcionada por usted en el presente formato estará sujeta a los siguientes usos de rutina:

1. La información en este formato será tratada confidencialmente en la medida permitida bajo la Ley de Libertad de Información (5 U.S.C. 552) y la Ley de Privacidad (5 U.S.C. 552a). Registros de este sistema de registros pueden revelarse al Departamento de Justicia para determinar si se necesita revelar estos registros por la Ley de Libertad de Información.

2. Se puede revelar un registro de este Sistema de registros, como uso de rutina, en el curso de presentación de evidencia a un tribunal, magistrado, o tribunal administrativo, incluyendo divulgaciones al abogado opositor en el curso de negociaciones de conciliación.
3. Se puede revelar un registro en este Sistema de registros, como uso de rutina, a un Miembro del Congreso enviándole una solicitud relativa a un individuo, a quien le corresponde el registro, cuando el individuo ha solicitado ayuda del Miembro con respecto a la materia del registro.
4. Se puede revelar un registro en este sistema de registros, como uso de rutina, a un contratista de la Agencia que necesite la información con el fin de realizar un contrato. Los receptores de la información estarán obligados a cumplir con los requerimientos de la Ley de Privacidad de 1974, en su versión modificada, conforme a 5 U.S.C. 552a(m).
5. Se puede revelar un registro relacionado con una Solicitud Internacional presentada bajo el Tratado de Cooperación de Patente en este sistema de registros, como uso de rutina, a la Oficina Internacional de la Organización de Propiedad Intelectual, conforme al Tratado de Cooperación de Patente.
6. Se puede revelar un registro en este sistema de registros, como uso de rutina, a otra agencia federal para fines de revisión de Seguridad Nacional (35 U.S.C. 181) y para revisión conforme a la Ley de Energía Atómica (42 U.S.C. 218(c)).
7. Se puede revelar un registro de este sistema de registros, como uso de rutina, al Administrador, Servicios Generales, o su designado, durante una inspección de registros realizado por la GSA como parte de la responsabilidad de esa agencia para recomendar mejoras en la práctica del manejo de los registros y programas, bajo la autoridad de 44 U.S.C. 2904 y 2906. Tal revelación debe realizarse de acuerdo con las regulaciones de la GSA que rigen la inspección de registros para este propósito, y cualquier otro directivo (i.e. GSA o de Comercio) relevante. Tal revelación no se usará para hacer determinaciones sobre individuos.
8. Se puede revelar un registro de este sistema de registros, como uso de rutina, al público después de cada publicación de la solicitud conforme a 35 U.S.C. 122(b) o la expedición de una patente conforme a 35 U.S.C. 151. Adicionalmente, un registro puede revelarse, sujeto a las limitaciones de 37 CFR 1.14, como uso de rutina, al público si el registro fue presentado en una solicitud que se abandonó o en donde los trámites terminaron y cuya aplicación se referencia tanto por una solicitud publicada, una solicitud abierta a la inspección pública o una patente expedida.
9. Se puede revelar un registro de este sistema de registros, como uso de rutina, a una agencia del orden público Federal, Estatal, o local, si la USPTO se da cuenta de una violación o violación potencial de la ley o reglamento.

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Patente
Expediente de abogado No. 0067-0172 PR

EN LA OFICINA DE MARCAS Y PATENTES DE LOS ESTADOS UNIDOS

En re Solicitud de Patente de	)	
	)	
Larry N. Siebens et al.	)	Group Art Unit: Sin asignar
	)	
Solicitud No.: Sin asignar	)	Examinador: Sin asignar
	)	
Presentado: 17 de noviembre de 2014	)	
	)	
Para: ENLACE A TIERRA PARA	)	
MECANISMO DE CONECTOR	)	
ELÉCTRICO	)	

PORTADA DE LA TASA DE TRANSMISIÓN

Oficina de Marcas y Patentes de los EE.UU.
Ventana de Servicio al Cliente
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Señor:

Por la presente se autoriza al Comisionado a cargar cualquier otra tarifa apropiada que puede requerirse mediante la presentación de esta solicitud que no se contabilicen, y acreditaremos cualquier pago adicional, a la Cuenta de Depósito No. 50-4752.

Presentado respetuosamente,
SNYDER, CLARK, LESCH & CHUNG, L.L.P.
Por: /Robin C. Clark, Reg. No. 40.956/
Robin C. Clark
Reg. No. 40.956

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Fecha: 17 de noviembre de 2014