

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

NO REGISTRARLOS



DELEGATURA PROPIEDAD INDUSTRIAL

División de Nuevas Creaciones

SOLICITUD

PATENTE DE INVENCION

ENTRADA EN FASE NACIONAL

07-3861

21. EXPEDIENTE No.

54. TITULO CONECTORES ESPECIFICAMENTE COMPATIBLES PARA ADMINISTRACION

DE GASES ALMACENADOS

51. CLASIFICACION INTERNACIONAL

71. SOLICITANTE THE BOC GROUP, INC.

DOMICILIO MURRAY HILL, NEW JERSEY, ESTADOS UNIDOS DE AMERICA

74. APODERADO JUAN PABLO CADENA SARMIENTO

22. SANTAFE DE BOGOTA, D.C.

PETITORIO

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EVE: 3/0 FASE NACIONAL
ACT: 11 PRESENTACION

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FORMULARIO ÚNICO DE SOLICITUD DE PATENTE
PCT
ENTRADA EN FASE NACIONAL

1

SOLICITUD DE:



Patente de Invención.



Patente de Modelo de Utilidad.



Capítulo I.



Capítulo II.

2

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IDENTIFICACION

C.C.



NIT



C.E.



Otro



Cual _____

Número _____

3

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Cual _____

Número 80.410.337 TP 57492

4

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5 PCT (86)

Solicitud Internacional No. PCT/US2005/021555 Fecha 17-08-2005Publicación Internacional No. WO 2006/009885 A2 Fecha 26-01-2006Título (54): CONECTORES ESPECÍFICAMENTE COMPATIBLES PARA ADMINISTRACIÓN DE GASES ALMACENADOS

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SI ☒NO ☐

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18-08-2004

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60/581.321

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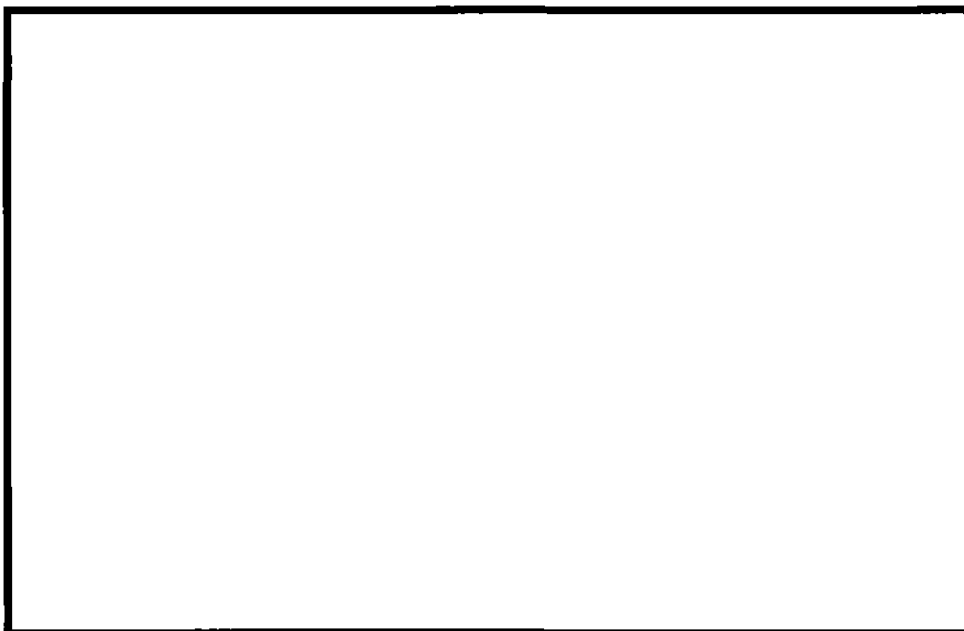
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10

ANEXOS

- ☒ Comprobante de pago de la tasa de presentación de la solicitud. \$482.000
- ☐ Documento que acredita la existencia y representación legal cuando el solicitante sea persona jurídica.
- ☐ Poderes, si fuere el caso. Fotocopia autenticada
- ☐ Documento de cesión del inventor al solicitante o a su causante.
- ☐ Declaraciones.
- ☒ Copia de la solicitud internacional. (Resumen, descripción, reivindicaciones, dibujos)
- ☒ Traducción de la solicitud internacional al castellano (Resumen, descripción, reivindicaciones, dibujos)
- ☐ Copia del examen preliminar efectuado por la IPEA.
- ☐ Traducción del examen preliminar efectuado por la IPEA.
- ☐ De ser el caso, copia del contrato de acceso.
- ☐ De ser el caso, documento que acredite la licencia o autorización de uso de conocimientos tradicionales de las comunidades indígenas.
- ☐ De ser el caso, certificado de depósito del material biológico.
- ☐ Arte final 12x12.
- ☐ De ser el caso, información sobre otras solicitudes de patente o títulos obtenidos en el extranjero por el mismo titular o su causante, relacionadas parcial o totalmente con la invención de esta solicitud.
- ☒ Otros: Documentos PCT
Tarjeta de Propietarios

11 FIGURA CARACTERÍSTICA:



12 Solicito la concesión de la patente,

NOMBRE: JUAN PABLO CADENA SARMIENTO

FIRMA: Juan P. Caden

C.C. 80.410.337 de Usaquén TP 57492 del C.S.J.

Instrucciones para la presentación de los anexos, ver reverso de esta página.

As 102.827

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

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FECHA : ENERO 3 DE 2007

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E.V. 3/0 FASE NACIONAL
Act 411 PRESENTACION Form: 40

CONSIGNACION

DEPOSITANTE	TIPO PAGO	BANCO	CUENTA	No. PAGO	FECHA PGO	Vr. PAGO
BRIGARD & CASTRO LTDA	CONSIGNACION	BANCO POPULAR	030-00110-8	55053109	03/01/2007	64,370,000.00

CONCEPTO

CANT. CONTISTICO	CONCEPTO	TOTAL CONCEPTO
1 50005-01-01 SOLICITUDES	1 TRAMITES DE SOL. DE PATENTE DE IN	482,000.00
	TOTAL :	482,000.00

SON: CUATROCIENTOS OCHENTA Y DOS MIL PESOS

RESPONSABLE : 

RECIBO DE CAJA APLICADO AL EXPEDIENTE No. _____

PATENT COOPERATION TREATY

PCT/US2005/021555

PCT

NOTIFICATION OF THE RECORDING
OF A CHANGE(PCT Rule 92bis.1 and
Administrative Instructions, Section 422)

From the INTERNATIONAL BUREAU

RECEIVED

To:

MAY 15 2006

WARREN, William, L.
Sutherland Asbill & Brennan LLP
999 Peachtree Street, NE
Atlanta, Georgia 30309-3996
United States of America

Date of mailing (day/month/year) 25 April 2006 (25.04.2006)	
Applicant's or agent's file reference 18929-0022	IMPORTANT NOTIFICATION
International application No. PCT/US2005/021555	International filing date (day/month/year) 17 June 2005 (17.06.2005)

1. The following indications appeared on record concerning:

☒ the applicant ☐ the inventor ☐ the agent ☐ the common representative

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2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:

☒ the person ☐ the name ☐ the address ☐ the nationality ☐ the residence

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Facsimile No.

Teleprinter No.

3. Further observations, if necessary:

4. A copy of this notification has been sent to:

☒ the receiving Office ☒ the designated Offices concerned
☒ the International Searching Authority ☐ the elected Offices concerned
☐ the International Preliminary Examining Authority ☐ other:

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. (41-22) 338.70.10	Authorized officer Lorenzo TARTABULL Telephone No. (41-22) 338 9099
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60/581,321 18 June 2004 (18.06.2004) US(71) Applicant (for all designated States except US):
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of each regular issue of the PCT Gazette.

(54) Title: SPECIFICALLY COMPATIBLE CONNECTORS FOR ADMINISTRATION OF STORED GASES

(57) Abstract: This invention relates to the field of connectors used to connect gas sources to apparatus for the administration or other use of gas or mixtures of gases, and more specifically to connectors used for gas administration for respiratory support of a user or patient. The connectors according to the present invention are shaped to be specifically compatible only with like connectors for each specific type of gas or gas mixture used in the application, thus reducing or eliminating the chance for user error in connecting the wrong distribution connector to a particular supply connector.

WO 2006/009885 A2

**SPECIFICALLY COMPATIBLE CONNECTORS
FOR ADMINISTRATION OF STORED GASES****Technical Field of the Invention**

5 [001] The present invention relates generally to the field of couplings, related in-line devices, and delivery conduits for gases used in respiratory support applications, and relates more specifically to the administration of mixtures of two or more gases for medically therapeutic or other respiratory support applications or environmentally controlled systems in which proper connection to a specific gas source is critical for
10 safe and proper gas use.

Background of the Invention

[002] In industrial, healthcare, aerospace, and recreational underwater settings, a gas or mixture of gases is often contained within pressurized cylinders, tanks, or other containers, from which a controlled release of the gas is effected for a desired purpose.
15 In many such applications, compressed air, pure oxygen, or a mixture of oxygen and other gases is often contained within pressurized cylinders, tanks, or other vessels and dispensed for use in breathing by persons in low oxygen environments, or by persons with impaired respiratory function. In certain industrial and research settings, it is desirable to provide a controlled atmosphere with a specific ambient gas or gas mixture
20 contained, and common gas sources must be connected to an environmental chamber to deliver the desired atmospheric content.

[003] In existing settings involving the administration of stored gases or gas mixtures, the standard end fittings for conventional gas delivery lines consist of identical ridged tubing bibs, so that different gases may too easily be connected to the wrong delivery
25 systems.

[004] Administration of another gas instead of specifically oxygen or air may produce a situation incompatible with life, or result in an improper gas admixture with adverse physiologic or environmental sequelae.

[005] Existing technology for pressurized gas cylinders, tanks, and other containers
30 does not provide for unique couplings to ensure proper connection of a gas delivery system to the appropriate gas source.

[006] Applications that involve the administration of a gas for respiratory support often involve settings with gas sources supplied through multiple available distribution

channels which may include oxygen, compressed air, nitrogen, helium, nitrous oxide, carbon dioxide, combinations thereof, and other single or mixed gas sources.

[007] In an application where a person is relying upon a pressurized gas container to provide oxygen for respiratory assistance or support, there is the potential risk that a connection might be inadvertently made to the wrong gas source, resulting in the administration of an undesired gas or gas mixture to a user or patient. Such a situation could have catastrophic results, and could result in serious injury or death.

[008] In an industrial or research setting dependent upon a controlled specific atmosphere, incorrect connections to a multi-channel gas distribution system or multiple gas tanks may result in adverse results which may range from the spoiling of manufacturing processes or research studies to potentially hazardous conditions.

[009] Thus, the need exists for pressurized gas cylinders, tanks, and other containers used for biological respiratory support and other environmental control systems that incorporate unique couplings to ensure proper connection of a gas delivery system to the appropriate gas source.

Summary Of The Invention

[010] It is an object according to the present invention to provide gas delivery systems with specifically compatible connectors to prevent inadvertent connection of delivery devices to incorrect gas sources.

[011] It is a further object according to the present invention to provide gas delivery systems with connector systems that allow quick and accurate connections of gas delivery apparatus to gas sources with diminished opportunities for user error.

[012] These and other features, aspects, and other advantages according to the present invention will become more apparent and more readily understood with regard to the following specification, drawings, description, appended claims, and any examples of the present preferred embodiments of the invention which are disclosed herein.

Brief Description Of The Drawings

[013] FIG. 1 provides a drawing of a conventional gas connector system with identical gas supply connectors for each of two gas supply channels.

9 8

[014] FIG. 2 provides a drawing of an exemplary gas connector system with specifically compatible connectors for each of two gas supply channels according to the present invention.

[015] FIG. 3 provides a drawing of an exemplary gas connector system with specifically compatible male and female connectors for a gas supply channel according to the present invention.

[016] FIG. 4 provides a drawing of an exemplary gas connector system with specifically compatible barbed connectors for an exemplary dual gas supply system according to the present invention.

[017] FIG. 5 provides a drawing of an exemplary gas connector system with specifically compatible barbed connectors for an alternate arrangement of an exemplary dual gas supply system according to the present invention.

[018] FIG. 6 provides a drawing of an exemplary gas connector system with specifically compatible barbed connectors for another alternate arrangement of an exemplary dual gas supply system according to the present invention.

Detailed Description Of The Invention

[019] The present invention may be understood more readily by reference to the following detailed description of the preferred embodiments of the invention and the Examples included herein. However, before the preferred embodiments of the devices and methods according to the present invention are disclosed and described, it is to be understood that this invention is not limited to the exemplary embodiments described within this disclosure, and the numerous modifications and variations therein that will be apparent to those skilled in the art remain within the scope of the invention disclosed herein. It is also to be understood that the terminology used herein is for the purpose of describing specific embodiments only and is not intended to be limiting.

[020] Unless otherwise noted, the terms used herein are to be understood according to conventional usage by those of ordinary skill in the relevant art. In addition to the definitions of terms provided below, it is to be understood that as used in the specification and in the claims, "a" or "an" can mean one or more, depending upon the context in which it is used.

[021] The term "gas container" as used herein is defined as any cylinder, tank, or other vessel used to confine and contain a gas for controlled release and use thereof. Preferably, a gas container is capable of storing gas under high pressure.

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[022] The term "connector" as used herein is defined as any gas valve, regulator, tubing or other flow-through attachment fitting used to provide gas flow continuity for the delivery of a gas from a container.

[023] Referring now to an exemplary conventional gas supply connector as shown in Fig. 1, a gas supply connector component 100 attaches in flow continuity with a gas supply 20 which may represent a gas tank, cylinder, reservoir, piping or tubing in flow continuity with such a gas source, and is provided with a gas supply valve 10 operable by a gas valve control 5 and terminating in a gas supply connector 15. It is noted that the gas supply connector 5 as shown is a standard, tapering gas hose bib with a series of ridges of tapering diameters to allow slip-on attachment and frictional retention of a rubber, plastic, or other polymeric tubing or connector. The illustration of Fig. 1 shows a dual head supply. In various applications, both heads could be connected to the same gas supply. In other applications commonly employed, each head could be connected to a different gas supply. In that event, the different gases would be accessible through identical gas supply connectors, opening the risks of erroneous connections and undesirable results.

[024] Fig. 2 shows an exemplary embodiment according to the present invention, in which a dual headed gas supply connector 200 attaches in flow continuity with a common gas supply 225 which may represent one or more gas tanks, cylinders, reservoirs, or piping or tubing in flow continuity with such a gas source or sources. As shown in Fig. 2, each head is provided with a gas supply valve 210 operable by a gas valve control 205 and terminating in a gas supply connector 220 and 220'. Near the terminal ends of the gas supply connectors 220 and 220' is a retention mechanism 215 which may be employed in various embodiments according to the present invention to secure a connection. In various possible embodiments of the present invention, the retention mechanism 215 may represent a tapered hose bib, screw-thread receptor, a locking ring, or any other latching mechanism that could serve to secure a connection at the gas supply connectors 220 and 220'.

[025] It should be noted that the gas supply connectors 220 and 220' such as shown in Fig. 2 are of different shapes, with gas supply connector 220 ending in a square or diamond-shaped tube, and gas supply connectors 220' ending in a round tube. In this example, gas supply connector 220 may be either a male or female connector, and would be able to securely attach only to a similarly-shaped square/diamond tubular connector of opposite gender. Similarly, gas supply connector 220' may be either a

H 10

male or female connector, and would be able to securely attach only to a similarly-shaped round tubular connector of opposite gender. Thus, the same connector would not be capable of secure attachment to both gas supply connectors 220 and 220'.

5 [026] The present invention provides that uniquely compatible shaped connectors are also employed on single headed gas connectors and the respective tubing or operable devices associated therewith. Therefore, the uniquely compatible shaped connectors are employed on the connectors adjacent gas containers, as well as the connectors adjacent the device intended for administration of the gas, such as a nebulizer or respirator mask, and on the tubing therebetween.

10 [027] Fig. 3 shows an exemplary embodiment of another set of connectors according to the present invention. Here, the connectors 300 comprise mating ends of two tubings, a distribution tubing 305 and a supply tubing 330. A set of pivoting locking jaws 325 near the end of one tubing is provided to engage a locking ring 310 near the end of the other tubing. In the example shown, a male connector 320 is provided as a
15 triangularly-shaped tube, and is sized to be received by a female connector 315 on the other tubing. In various embodiments according to the present invention, the locations and mechanical nature of the locking mechanism, the terminal shape of the connectors, and the gender of the supply and distribution sides of a connection may be changed to include any possible arrangement thereof. The locking mechanism may involve a
20 mechanical jaw/rim lock as show, or may involve a threaded screw, friction detent, or other conventional locking system.

[028] In specific applications according to the present invention, it is provided that differing shaped connectors of appropriate gender would be consistently used for specific gas sources, so that inadvertent improper connections would not be possible.
25 In such various embodiments, the uniquely compatible mating connectors can each be round, oval, triangular, square, rectangular, hourglass-shaped, octagonal, polygonal, or other geometric or non-geometric shape, and of varying sizes to allow sufficient specific keying of the gas distribution system involved.

[029] EXAMPLE 1: A specific example of an embodiment according to the present
30 invention is in the field of respiratory therapy, and relates to the therapeutic administration of helium and oxygen (heliox) in gas mixtures of specific concentrations. Medical uses of heliox are expanding, and clinical improvements have been reported in a number of chronic respiratory disorders. Heliox therapy inherently depends upon the mixture of two gas sources. While single containers may be obtained

with a specified gas concentration, it would be useful if hospitals could make use of their standard, piped-in oxygen distribution systems to feed a gas mixer with a separate helium source to be able to customize the heliox ratio for a given patient and clinical situation. Using conventional technology, it would be dangerously easy to confuse the gas supplies due to their common connectors, and the result of such an error could be catastrophic. Using specifically compatible connectors according to the present invention, a helium distribution line could only be connected to a helium supply line with for example triangular shaped male-female compatible connectors, and an oxygen distribution line could only be connected to an oxygen supply line with for example square shaped male-female compatible connectors, effectively eliminating the chance of improper source connections.

[030] EXAMPLE 2: Another specific example of an embodiment according to the present invention in the field of respiratory therapy relates to the therapeutic administration of helium and oxygen (heliox) in gas pre-mixtures of specific concentrations. Using specifically compatible connectors according to the present invention, a helium/oxygen supply container distribution line can only be connected to a helium/oxygen supply line and nebulizer mask with (for example) octagonal shaped male-female compatible connectors, effectively eliminating the chance of improper source connections. In another exemplary embodiment according to the present invention, specific connection geometry would be provided to distinguish the nebulizer and reservoir so that helium/oxygen could be supplied without use of a nebulizer and without the possibility of confusion that could result in no gas supply. Further examples of specifically compatible connectors according to the present invention are shown in Figs. 4-6 where the connectors are shown in association with a dual gas supply container and regulator, such as those employed for heliox applications.

[031] Finally, while there have been shown and described and pointed out fundamental novel features of the present invention as applied to preferred embodiments thereof, it will be understood that various omissions and substitutions and changes in the materials, form, and details of the devices and processes illustrated, and in their operation, and in the method illustrated and described, may be made by those skilled in the art without departing from the spirit of the invention as broadly disclosed herein. All of the above-discussed patents and publications are hereby expressly incorporated by reference as if they were written directly herein.

CLAIMS

WE CLAIM:

1. A system of connectors for use in gas distribution systems, wherein said
5 connectors are shaped to be specifically compatible only with like connectors for a
specific gas supply in use in a given application.
2. The system of claim 1, wherein said connectors are provided as male and/or
female mating connectors with similarly shaped and sized cross-sectional dimensions.
3. The system of claim 1, wherein said connectors are provided as hose bibs.
- 10 4. The system of claim 3, wherein said hose bibs are provided as tapered male hose
bibs to receive mating female tubing or other mating female connectors.
5. The system of claim 2, wherein said male connectors are provided in their cross-
sectional dimension as substantially round, and sized to allow specific keying with like-
shaped female connectors specific to a desired gas distribution system.
- 15 6. The system of claim 2, wherein said male connectors are provided in their cross-
sectional dimension as substantially oval, and sized to allow specific keying with like-
shaped female connectors specific to a desired gas distribution system.
7. The system of claim 2, wherein said male connectors are provided in their cross-
sectional dimension as substantially triangular, and sized to allow specific keying with
20 like-shaped female connectors specific to a desired gas distribution system.
8. The system of claim 2, wherein said male connectors are provided in their cross-
sectional dimension as substantially square, and sized to allow specific keying with like-
shaped female connectors specific to a desired gas distribution system.
9. The system of claim 2, wherein said male connectors are provided in their cross-
25 sectional dimension as substantially rectangular, and sized to allow specific keying with
like-shaped female connectors specific to a desired gas distribution system.
10. The system of claim 2, wherein said male connectors are provided in their cross-
sectional dimension as substantially hourglass-shaped, and sized to allow specific keying
with like-shaped female connectors specific to a desired gas distribution system.
- 30 11. The system of claim 2, wherein said male connectors are provided in their cross-
sectional dimension as substantially octagonal, and sized to allow specific keying with
like-shaped female connectors specific to a desired gas distribution system.

12. The system of claim 2, wherein said male connectors are provided in their cross-sectional dimension as substantially polygonal, and sized to allow specific keying with like-shaped female connectors specific to a desired gas distribution system.
13. The system of claim 2, wherein said male connectors are provided in their cross-sectional dimension as substantially of any geometric or non-geometric shape, and sized to allow specific keying with like-shaped female connectors specific to a desired gas distribution system.
14. The system of claim 1, wherein said connectors further comprise a retention mechanism to discourage or prevent undesired separation of said connectors in use.
15. The system of claim 14, wherein said retention mechanism comprises screw-thread receptors and connectors.
16. The system of claim 14, wherein said retention mechanism comprises a friction detent system.
17. The system of claim 14, wherein said retention mechanism comprises a mechanical jaw/rim lock system.
18. A method of delivering one or more specific, desired gases, comprising use of a system of gas connectors that are shaped to be specifically compatible only with like connectors for each specific gas supply in use in a given application.

1/3

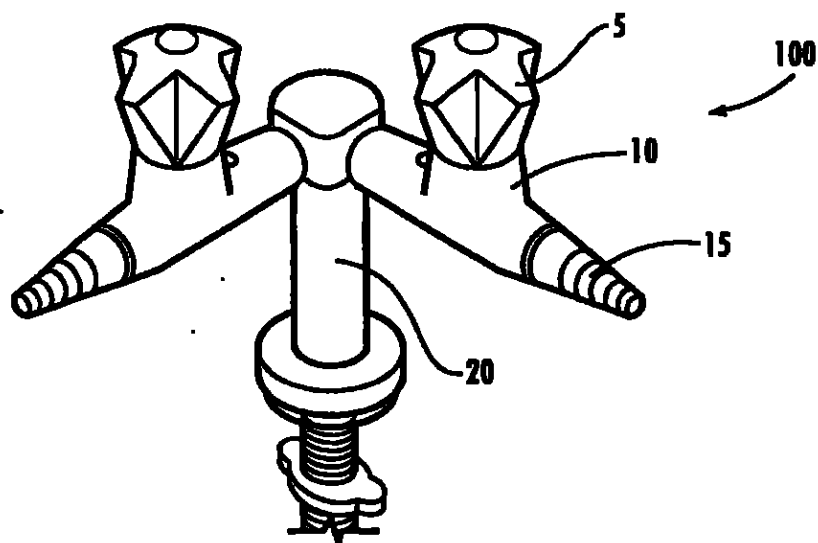


Fig. 1

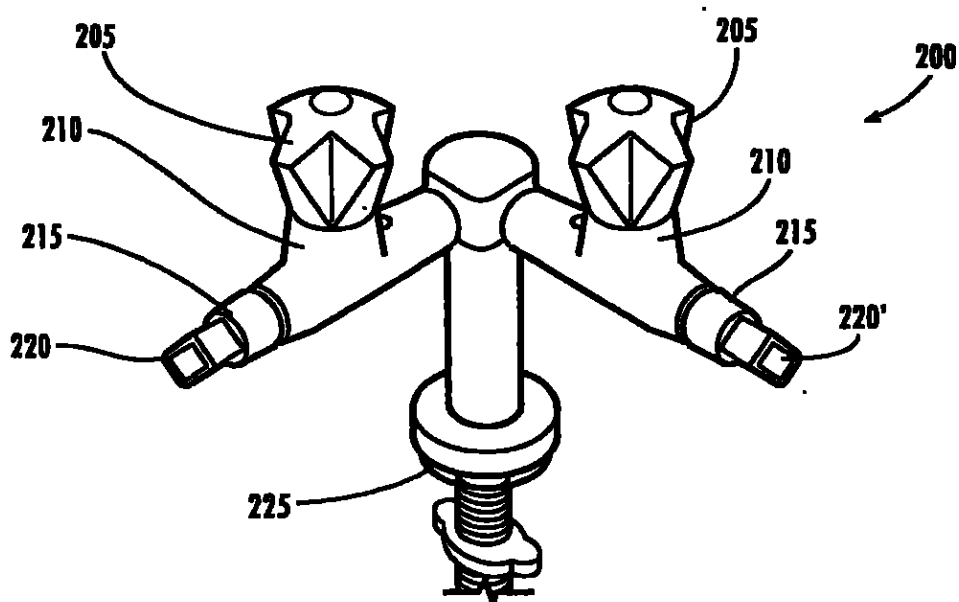


Fig. 2

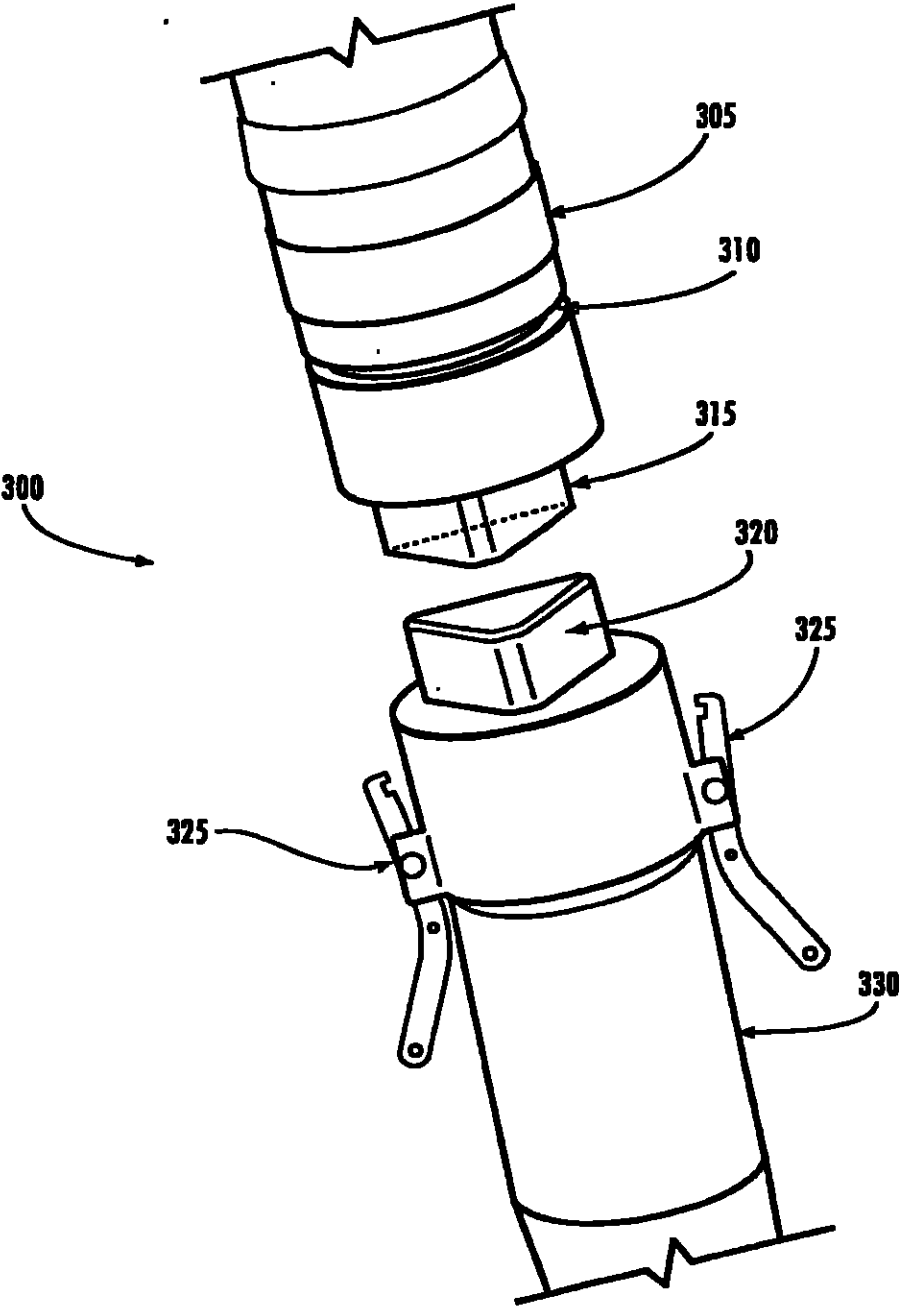


Fig. 3

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3/3

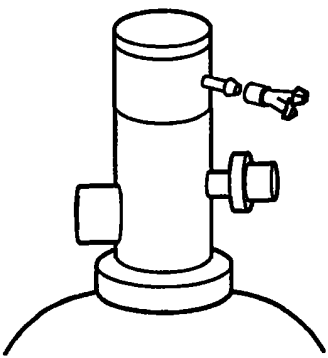


Fig. 4

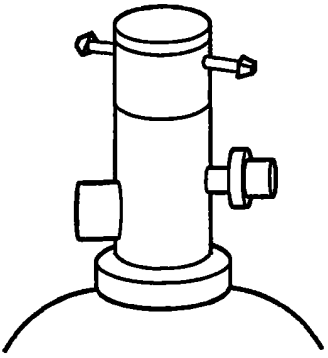


Fig. 5

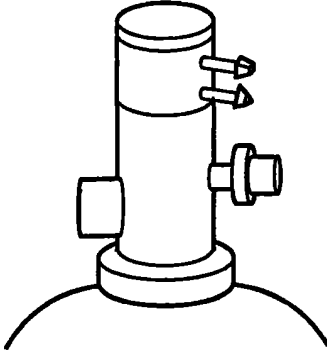


Fig. 6

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(84) Título: CONECTORES ESPECÍFICAMENTE COMPATIBLES PARA ADMINISTRACIÓN DE GASES ALMACENADOS

(57) Extracto: Esta invención se refiere al campo de los conectores utilizados para conectar fuentes de gas a aparatos para la administración u otro uso de gas o mezclas de gases y, más específicamente a conectores empleados para administración de gas con fines de apoyo respiratorio de un usuario o paciente. Los conectores de acuerdo con la presente invención se configuran para ser específicamente compatibles únicamente con conectores similares para cada tipo específico de gas o mezcla de gases utilizados en la aplicación, reduciendo o eliminando de ese modo la posibilidad de un error por parte del usuario en conectar el conector de distribución erróneo a un conector d abastecimiento particular.

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CONECTORES ESPECÍFICAMENTE COMPATIBLES PARA ADMINISTRACIÓN DE GASES ALMACENADOS

Campo Técnico de la Invención

[001] La presente invención se refiere generalmente al campo de los empalmes, dispositivos relacionados en línea y tuberías de suministro de gases, utilizados en aplicaciones de apoyo respiratorio, y tiene que ver más específicamente con la administración de mezclas de dos o más gases para aplicaciones terapéuticas desde el punto de vista médico u otras aplicaciones de apoyo respiratorio o sistemas ambientalmente controlados, en los cuales la conexión adecuada a una fuente de gas específica es crítica para un uso seguro y adecuado del gas.

Antecedentes de la Invención

[002] En escenarios industriales, de atención médica, aeroespaciales y submarinos recreativos, un gas o mezcla de gases se contiene a menudo en cilindros a presión, tanques, u otros recipientes, de los cuales se efectúa una liberación controlada del gas para un propósito deseado. En muchas de tales aplicaciones, aire comprimido, oxígeno puro, o una mezcla de oxígeno y otros gases se contienen a menudo en cilindros a presión, tanques, u otros depósitos y se dispensan para uso en respiración por personas en ambientes con baja presencia de oxígeno, o por personas con función respiratoria disminuida. En ciertos escenarios industriales y de investigación, es deseable proporcionar una atmósfera controlada con un gas ambiente específico o mezcla de gases contenidos, y las fuentes comunes de gas tienen que conectarse a una cámara ambiental para suministrar el contenido atmosférico deseado.

[003] En escenarios existentes, que involucran la administración de gases almacenados o mezclas de gases, los accesorios finales estándar de líneas convencionales de suministro de gas constan de grifos idénticos para

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tubería, provistos de crestas, de manera que gases diferentes pueden conectarse con suma facilidad a los sistemas de suministro incorrectos.

[004] La administración de un gas distinto en vez, específicamente, de oxígeno o aire puede dar lugar a una situación incompatible con la vida, o resultar en una mezcla inadecuada de gas, con secuelas fisiológicas o ambientales adversas.

[005] La tecnología existente para cilindros de gas a presión, tanques y otros recipientes no permite empalmes únicos para garantizar la conexión adecuada de un sistema de suministro de gas a la fuente de gas apropiada.

[006] Las aplicaciones que involucran la administración de un gas para apoyo respiratorio involucran a menudo escenarios con fuentes de gas abastecidas a través de canales múltiples de distribución disponibles, que pueden incluir oxígeno, aire comprimido, nitrógeno, helio, óxido nitroso, dióxido de carbono, combinaciones de los mismos, y otras fuentes de gas único o mixto.

[007] En una aplicación donde una persona utiliza un recipiente de gas a presión para suministrar oxígeno para ayuda o soporte respiratorio, existe el riesgo potencial de hacer inadvertidamente una conexión a la fuente errónea de gas, resultando en la administración de un gas o mezcla de gases indeseados a un usuario o paciente. Tal situación podría tener resultados catastróficos y podría traducirse en lesión seria o muerte.

[008] En un escenario industrial o de investigación que dependa de una atmósfera específica controlada, las conexiones incorrectas a un sistema de distribución de gas multi-canal, o a múltiples tanques de gas, puede traducirse en resultados adversos, los cuales pueden variar desde arruinar los procesos de fabricación o los estudios de investigación, hasta condiciones potencialmente peligrosas.



[009] Por consiguiente, existe la necesidad de cilindros de gas a presión, tanques y otros recipientes utilizados para sistemas de apoyo respiratorio biológico y otros sistemas de control ambiental, que incorporen empalmes únicos con el fin de garantizar la conexión correcta de un sistema de descarga de gas a la fuente de gas apropiada.

Sumario de la Invención

[010] Es un objeto de acuerdo con la presente invención proporcionar sistemas de suministro de gas con conectores específicamente compatibles para impedir la conexión inadvertida de dispositivos de suministro a fuentes incorrectas de gas.

[011] Es un objeto adicional de acuerdo con la presente invención proporcionar sistemas de suministro de gas con sistemas conectores, que permitan conexiones rápidas y apropiadas de aparatos de suministro de gas a fuentes de gas, reduciendo las posibilidades de error por parte del usuario.

[012] Éstas y otras características, aspectos y demás ventajas, de acuerdo con la presente invención se harán más evidentes y se entenderán más fácilmente con respecto a la siguiente especificación, dibujos, descripción, reivindicaciones adjuntas y cualesquiera ejemplos de las presentes incorporaciones preferidas de la invención, que se divulgan en esta solicitud.

Breve Descripción de los Dibujos

[013] FIG. 1 presenta un dibujo de un sistema conector de gas convencional con conectores idénticos de suministro de gas para cada uno de dos canales de abastecimiento de gas.

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[014] FIG. 2 presenta un dibujo de un sistema conector de gas ejemplar con conectores específicamente compatibles para cada uno de dos canales de abastecimiento de gas, de acuerdo con la presente invención.

[015] FIG. 3 presenta un dibujo de un sistema conector de gas ejemplar con conectores machos y hembras, específicamente compatibles para un canal de abastecimiento de gas, de acuerdo con la presente invención.

[016] FIG. 4 presenta un dibujo de un sistema conector de gas ejemplar con conectores arponados, específicamente compatibles para un sistema de abastecimiento de gas dual ejemplar, de acuerdo con la presente invención.

[017] FIG. 5 presenta un dibujo de un sistema conector de gas ejemplar con conectores arponados, específicamente compatibles para un arreglo alternativo de un sistema de abastecimiento de gas dual ejemplar, de acuerdo con la presente invención.

[018] FIG. 6 presenta un dibujo de un sistema conector de gas ejemplar con conectores arponados, específicamente compatibles para otro arreglo alternativo de un sistema de abastecimiento de gas dual ejemplar, de acuerdo con la presente invención.

Descripción Detallada de la Invención

[019] La presente invención puede entenderse más fácilmente por referencia a la siguiente descripción detallada de las incorporaciones preferidas de la invención y los Ejemplos incluidos en esta solicitud. No obstante, antes de divulgar y describir las incorporaciones preferidas de los dispositivos y métodos de acuerdo con la presente invención, hay que entender que esta invención no se limita a las incorporaciones ejemplares descritas en esta divulgación, y las numerosas modificaciones y variaciones en ella, que serán evidentes a los expertos en el arte, permanecen en el ámbito de la invención divulgada en esta solicitud. De igual manera hay

que entender que la terminología usada en esta solicitud sirve ~~al~~ propósito de describir incorporaciones específicas únicamente y no pretende ser limitante.

[020] A menos que se anote lo contrario, los términos utilizados en esta solicitud tienen que entenderse de acuerdo con el uso convencional por las personas de habilidad ordinaria en el arte relevante. Además de las definiciones de términos consignados más adelante, hay que entender que tal como se emplean en la especificación y en las reivindicaciones, "un" o "uno" puede significar uno o más, dependiendo del contexto en el cual se utiliza.

[021] El término "recipiente de gas", tal como se emplea aquí, se define como cualquier cilindro de gas, tanque, u otro depósito usado para encerrar y contener un gas para liberación controlada y su uso. Preferiblemente, como recipiente de gas es capaz de almacenar gas bajo presión elevada.

[022] El término "conector", tal como se emplea en esta solicitud, se define como cualquier válvula de gas, regulador, tubería o cualquier otro accesorio de unión de flujo directo, utilizado para suministrar una continuidad de flujo de gas para el suministro de gas de un recipiente.

[023] Con referencia ahora a un conector ejemplar de abastecimiento de gas convencional, como se muestra en Fig. 1, un componente de un conector de abastecimiento de gas 100 se une en continuidad de flujo con un abastecimiento de gas 20, que puede representar un tanque de gas, cilindro, depósito, conducto o tubería en continuidad de flujo con dicha fuente de gas, y se provee con una válvula de abastecimiento de gas 10 operable por un control de válvula de gas 5 y que termina en un conector de abastecimiento de gas 15. Se observa que el conector de abastecimiento de gas 15, tal como se indica, es un grifo cónico estándar de manguera de gas con una serie de crestas de diámetros cónicos para permitir la inserción

("slip-on attachment") y la retención con fricción de un tubo o conector de caucho, plástico u otro polímero. La ilustración de Fig. 1 muestra un abastecimiento de cabezal dual. En varias aplicaciones, ambos cabezales podrían conectarse al mismo abastecimiento de gas. En otras aplicaciones empleadas comúnmente, cada cabezal podría conectarse a un abastecimiento de gas diferente. En ese caso, los diferentes gases serían accesibles a través de conectores idénticos de abastecimiento de gas, dejando abierta la posibilidad de riesgos de conexiones erróneas y resultados indeseados.

[024] Fig. 2 muestra una incorporación ejemplar de acuerdo con la presente invención, en la cual un conector de abastecimiento de gas de cabeza dual 200 se une en continuidad de flujo con un abastecimiento de gas común 225, que puede representar uno o más tanques de gas, cilindros, depósitos, o conductos o tuberías en continuidad de flujo con tal fuente o fuentes de gas. Como se muestra en Fig. 2, cada cabezal se provee con una válvula de abastecimiento de gas 210 operable mediante control de válvula de gas 205 y que termina en un conector de abastecimiento de gas 220 y 220'. Cerca de los extremos terminales de los conectores de abastecimiento de gas 220 y 220' se halla un mecanismo de sujeción 215, que puede emplearse en varias incorporaciones de acuerdo con la presente invención para asegurar una conexión. En varias incorporaciones posibles de la presente invención, el mecanismo de sujeción 215 puede representar un grifo cónico de manguera, un receptor de rosca de tornillo, un anillo de seguridad, o cualquier otro mecanismo de trinquete, que pueda servir para asegurar una conexión a los conectores de abastecimiento de gas 220 y 220'.

[025] Debe observarse que los conectores de abastecimiento de gas 220 y 220' tal como se muestran en Fig. 2 son de diferentes formas, terminando el conector de abastecimiento de gas 220 en un tubo cuadrado o romboide, y rematando los conectores de abastecimiento de gas 220' en un tubo

redondo. En este ejemplo, el conector de abastecimiento de gas 220 puede ser un conector macho o hembra, y estaría en capacidad de acoplarse herméticamente tan sólo a un conector tubular de configuración similar cuadrada/romboide de género opuesto. Análogamente, el conector de abastecimiento de gas 220' puede ser un conector macho o hembra, y estaría en capacidad de acoplarse herméticamente tan sólo a un conector tubular de configuración similar redonda de género opuesto. Por consiguiente, el mismo conector no estaría en capacidad de acoplarse herméticamente a los dos conectores de abastecimiento de gas 220 y 220'.

[026] La presente invención contempla que conectores de configuración compatible única se empleen también en conectores de gas de cabezal único y la tubería respectiva o dispositivos operables asociados con ellos. En consecuencia, los conectores de configuración compatible única se emplean en los conectores adyacentes a los recipientes de gas, así como los conectores adyacentes al dispositivo previsto para administración del gas, tal como un nebulizador o mascarilla respiratoria, y en la tubería que los conecta.

[027] Fig. 3 muestra una incorporación ejemplar de otro juego de conectores de acuerdo con la presente invención. Aquí, los conectores 300 comprenden extremos compañeros de dos tuberías, una tubería de distribución 305 y una tubería de abastecimiento 330. Cerca del extremo de una tubería se dispone un juego de mordazas de seguridad pivotantes 325 para enganchar un anillo de seguridad 310 cerca del extremo de la otra tubería. En el ejemplo mostrado, un conector macho 320 se provee como un tubo de configuración triangular y se dimensiona para ser alojado por un conector hembra 315 en la otra tubería. En varias incorporaciones de acuerdo con la presente invención, las ubicaciones y naturaleza mecánica del mecanismo de seguridad, la configuración terminal de los conectores y el género de los lados de abastecimiento y distribución de una conexión pueden cambiarse para incluir cualquier arreglo posible de los mismos. El

mecanismo de seguridad, como se muestra, puede involucrar una mordaza mecánica/seguro de anillo, o puede involucrar un tornillo roscado, retén de traba, u otro sistema de seguridad convencional.

[028] En aplicaciones específicas de acuerdo con la presente invención, se contempla que conectores de diferente configuración de género apropiado se utilicen consistentemente para fuentes específicas de gas, con el fin de excluir la posibilidad de conexiones impropias inadvertidas. En tales varias incorporaciones, los conectores compañeros de compatibilidad única pueden ser redondos, ovales, triangulares, cuadrados, rectangulares, en forma de reloj de arena, octagonales, poligonales, u otra forma geométrica o no geométrica, y de tamaños variables para permitir un enchavetado específico suficiente del sistema de distribución de gas involucrado.

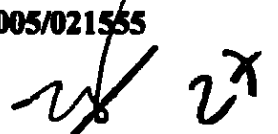
[029] EJEMPLO 1: Un ejemplo específico de una incorporación de acuerdo con la presente invención es el campo de la terapia respiratoria y se relaciona con la administración terapéutica de helio y oxígeno (heliox) en mezclas de gas de concentraciones específicas. Los usos médicos de heliox están en expansión, y se han comunicado mejoras clínicas en un número de trastornos respiratorios crónicos. La terapia con heliox depende inherentemente de la mezcla de dos fuentes de gas. Aunque pueden obtenerse recipientes individuales con una concentración de gas especificada, sería útil que los hospitales pudieran hacer uso de sus sistemas estándar de distribución de oxígeno, conducido por tubería, para alimentar un mezclador de gas con una fuente de helio separada, con el fin de poder personalizar la proporción de heliox para un paciente y situación clínica dados. Usando tecnología convencional, sería peligrosamente fácil confundir los abastecimientos de gas, debido a sus conectores comunes, y el resultado de tal error podría ser catastrófico. Usando conectores específicamente compatibles de acuerdo con la presente invención, una línea de distribución de helio podría conectarse únicamente a una línea de abastecimiento de helio con, por ejemplo, conectores compatibles macho-

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hembra de forma triangular, y una línea de distribución de oxígeno podría conectarse únicamente a una línea de abastecimiento de oxígeno con, por ejemplo, conectores compatibles macho-hembra de forma cuadrada, eliminando efectivamente la posibilidad de conexiones a fuentes inapropiadas.

[030] EJEMPLO 2: Otro ejemplo específico de una incorporación de acuerdo con la presente invención en el campo de la terapia respiratoria se refiere a la administración terapéutica de helio y oxígeno (heliox) en mezclas de concentraciones específicas. Usando conectores específicamente compatibles de acuerdo con la presente invención, una línea de distribución de un recipiente de abastecimiento de helio/oxígeno puede conectarse únicamente a una línea de abastecimiento de helio/oxígeno y una mascarilla nebulizadora con (por ejemplo) conectores compatibles macho-hembra de configuración octogonal, eliminando efectivamente la posibilidad de conexiones a fuentes inapropiadas. En otra incorporación ejemplar de acuerdo con la presente invención, se proveería una geometría de conexión específica para distinguir el nebulizador y el depósito, de modo que pudiera suministrarse helio/oxígeno sin el uso de un nebulizador y sin la posibilidad de confusión que podría traducirse en un no abastecimiento de gas. Otros ejemplos de conectores específicamente compatibles de acuerdo con la presente invención se muestran en Figs. 4-6, en donde los conectores se muestran en asociación con un recipiente y regulador de abastecimiento de gas dual, tal como los empleados para aplicaciones heliox.

[031] Finalmente, aunque se han mostrado, descrito y destacado características novedosas fundamentales de la presente invención, aplicadas a incorporaciones preferidas de la misma, se entenderá que varias omisiones y sustituciones y cambios en los materiales, forma y detalles de los dispositivos y procesos ilustrados, y en su operación, y en el método ilustrado y descrito, pueden introducirse por los expertos en el arte sin

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apartarse del espíritu de la invención como se divulga ampliamente en esta solicitud. La totalidad de las patentes y publicaciones ya comentadas se incorporan de manera expresa por la presente por referencia, como si se hubieran escrito directamente aquí.

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REIVINDICACIONES

REIVINDICAMOS:

1. Un sistema de conectores para uso en sistemas de distribución de gas, en donde dichos conectores se configuran para ser específicamente compatibles únicamente con conectores similares para un abastecimiento de gas específico en uso en una aplicación dada.
2. El sistema de la reivindicación 1, en donde dichos conectores se proveen como conectores compañeros machos y/o hembras, con dimensiones de sección transversal de tamaño y forma similares.
3. El sistema de la reivindicación 1, en donde dichos conectores se proveen como grifos de manguera.
4. El sistema de la reivindicación 3, en donde dichos grifos de manguera se proveen como grifos de manguera machos cónicos para recibir tubería hembra compañera u otros conectores hembra compañeros.
5. El sistema de la reivindicación 2, en donde dichos conectores machos se proveen en su dimensión de sección transversal como sustancialmente redondos, y se dimensionan para permitir un enchavetado específico con conectores específicos hembra, de igual configuración, a un sistema de distribución de gas deseado.
6. El sistema de la reivindicación 2, en donde dichos conectores macho se proveen en su dimensión de corte transversal como sustancialmente ovales y se dimensionan para permitir un enchavetado específico con conectores específicos hembra, de igual configuración, a un sistema de distribución de gas deseado.

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7. El sistema de la reivindicación 2, en donde dichos conectores macho se proveen en su dimensión de corte transversal como sustancialmente triangulares y se dimensionan para permitir un enchavetado específico con conectores específico hembra, de igual configuración, a un sistema de distribución de gas deseado.

8. El sistema de la reivindicación 2, en donde dichos conectores macho se proveen en su dimensión de corte transversal como sustancialmente cuadrados y se dimensionan para permitir un enchavetado específico con conectores específicos hembra, de igual configuración, a un sistema de distribución de gas deseado.

9. El sistema de la reivindicación 2, en donde dichos conectores macho se proveen en su dimensión de corte transversal como sustancialmente rectangulares y se dimensionan para permitir un enchavetado específico con conectores específicos hembra, de igual configuración, a un sistema de distribución de gas deseado.

10. El sistema de la reivindicación 2, en donde dichos conectores macho se proveen en su dimensión de corte transversal como sustancialmente en forma de reloj de arena y se dimensionan para permitir un enchavetado específico con conectores específicos hembra, de igual configuración, a un sistema de distribución de gas deseado.

11. El sistema de la reivindicación 2, en donde dichos conectores macho se proveen en su dimensión de corte transversal como sustancialmente octagonales y se dimensionan para permitir un enchavetado específico con conectores específicos hembra, de igual configuración, a un sistema de distribución de gas deseado.

12. El sistema de la reivindicación 2, en donde dichos conectores macho se proveen en su dimensión de corte transversal como sustancialmente

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poligonales y se dimensionan para permitir un enchavetado específico con conectores específicos hembra, de igual configuración, a un sistema de distribución de gas deseado.

13. El sistema de la reivindicación 2, en donde en donde dichos conectores macho se proveen en su dimensión de corte transversal como sustancialmente de cualquier forma geométrica o no geométrica y se dimensionan para permitir un enchavetado específico con conectores específicos hembra, de igual configuración, a un sistema de distribución de gas deseado.

14. El sistema de la reivindicación 1, en donde dichos conectores comprenden además un mecanismo de sujeción para desincentivar o impedir la separación no deseada de dichos conectores en uso.

15. El sistema de la reivindicación 14, en donde dicho mecanismo de sujeción comprende receptores y conectores de rosca de tornillo.

16. El sistema de la reivindicación 14, en donde dicho mecanismo de sujeción comprende un sistema de traba de fricción.

17. El sistema de la reivindicación 14, en donde dicho mecanismo de sujeción comprende un sistema de cierre de mordaza mecánica/seguro de anillo.

18. Un método de administrar uno o más gases específicos deseados, que comprende el uso de un sistema de conectores de gas, que se configuran para ser específicamente compatibles únicamente con conectores similares para cada suministro de gas específico en uso en una aplicación dada.

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To:
WILLIAM L. WARREN
SUTHERLAND ASBILL & BRENNAN LLP
999 PEACHTREE STREET, NE
ATLANTA, GA 30309-3996

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PCT

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL SEARCH REPORT AND
THE WRITTEN OPINION OF THE INTERNATIONAL
SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

Applicant's or agent's file reference 18929-0022	Date of mailing (day/month/year) 20 JUN. 2006
International application No. PCT/US05/21555	International filing date (day/month/year) 17 June 2005 (17.06.2005)
Applicant NUPHARMAX, LLC	

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.
 Filing of amendments and statement under Article 19:
 The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):
 When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.
 Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes
 1211 Geneva 20, Switzerland, Facsimile No.: (41-22) 338.82.70.
 For more detailed instructions, see the notes on the accompanying sheet.
2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.
3. ☐ With regard to the protest against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.
☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.
4. Reminders
 Shortly after the expiration of 18 months from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90bis.1 and 90bis.3, respectively, before the completion of the technical preparations for international publication.
 The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date.
 Within 19 months from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until 30 months from the priority date (in some Offices even later); otherwise, the applicant must, within 20 months from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.
 In respect of other designated Offices, the time limit of 30 months (or later) will apply even if no demand is filed within 19 months.
 See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the *PCT Applicant's Guide, Volume II, National Chapters* and the WIPO Internet site.

Name and mailing address of the ISA/ US
Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
Facsimile No. (571) 273-3201

Authorized officer

Aaron M. Dunwoody

Telephone No. (571) 272-3600

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

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Applicant's or agent's file reference 18929-0022	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/US05/21335	International filing date (day/month/year) 17 June 2005 (17.06.2005)	(Earliest) Priority Date (day/month/year) 18 June 2004 (18.06.2004)
Applicant NUPHARMAX, LLC		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 2 sheets.



It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the Report

a. With regard to the language, the international search was carried out on the basis of:



the international application in the language in which it was filed.



a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))

b. ☐ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.

2. ☐ Certain claims were found unsearchable (See Box No. II)

3. ☐ Unity of invention is lacking (See Box No. III)

4. With regard to the title,



the text is approved as submitted by the applicant.



the text has been established by this Authority to read as follows:

5. With regard to the abstract,



the text is approved as submitted by the applicant.



the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the drawings,

a. the figure of the drawings to be published with the abstract is Figure No. 2.



as suggested by the applicant.



as selected by this Authority, because the applicant failed to suggest a figure.



as selected by this Authority, because this figure better characterizes the invention.

b. ☐ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US05/21555

A. CLASSIFICATION OF SUBJECT MATTER

IPC: F16L 39/00(2006.01)

USPC: 137/883;285/125.1,23,131.1,140.1,311,320

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 137/883; 285/125.1,23,131.1,140.1,311,320

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,725,511 A (Urrutia) 10 March 1998 (11.03.1998), Figures 3-11.	7-12
Y	US 3,432,249 A (Helvoigt) 11 March 1969 (11.03.1969), Figure 2.	4
X	US 1,366,591 A (Passano) 25 January 1921 (25.01.1921), entire document.	1-3, 5-6, 13-14, 16 and 18
Y		4, 7-12

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another claim or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"Z" document member of the same patent family

Date of the actual completion of the international search

04 April 2006 (04.04.2006)

Date of mailing of the international search report

Authorized officer

Aaron M. Dunwoody

Telephone No. (571) 272-3600

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US

Commissioner for Patents

P.O. Box 1450

Alexandria, Virginia 22313-1450

Facsimile No. (571) 273-3201

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:
WILLIAM L. WARREN
SUTHERLAND ASBILL & BRENNAN LLP
999 PEACHTREE STREET, NE
ATLANTA, GA 30309-3996

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing
(day/month/year) **20 JUN 2006**

Applicant's or agent's file reference

18929-0022

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/US05/21555

International filing date (day/month/year)

17 June 2005 (17.06.2005)

Priority date (day/month/year)

18 June 2004 (18.06.2004)

International Patent Classification (IPC) or both national classification and IPC

IPC: F16L 39/08(2006.01)

USPC: 137/243;285/125.1,23,131.1,140.1,311,320

Applicant

NUPHARMAX, LLC

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/ US

Mail Stop PCT, Ana: ISA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Facsimile No. (571) 273-3201

Date of completion of this
opinion

04 April 2006 (04.04.2006)

Authorized officer

Baron M. Duxwoody

Telephone No. (571) 272-3600

Form PCT/ISA/237 (cover sheet) (April 2005)

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WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US05/21555

Box No. 1 Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of:

- ☒ the international application in the language in which it was filed
- ☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

- ☐ a sequence listing
- ☐ table(s) related to the sequence listing

b. format of material

- ☐ on paper
- ☐ in electronic form

c. time of filing/furnishing

- ☐ contained in the international application as filed.
- ☐ filed together with the international application in electronic form.
- ☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

3X 36

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/US05/21555

Box No. V Reasoned statement under Rule 43 bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims 15 and 17	YES
	Claims 1-3, 5, 6, 12, 14, 16 and 18	NO
Inventive step (IS)	Claims 15 and 17	YES
	Claims 1-14, 16 and 18	NO
Industrial applicability (IA)	Claims 1-18	YES
	Claims NONE	NO

2. Citations and explanations:

Please See Continuation Sheet

2/ 37

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/US05/21333

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

V. 2. Citations and Explanations:

Claims 1-3, 5, 6, 13, 14, 16 and 18 lack novelty under PCT Article 33(2) as being anticipated by US patent 1,366,591, Passano.

In regards to claim 1, in Figures 2 and 3, Passano discloses a system of connectors for use in gas distribution systems, wherein said connectors are shaped to be specifically compatible only with like connectors for a specific gas supply in use in a given application.

In regards to claim 2, Passano discloses said connectors are provided as male and/or female mating connectors with similarly shaped and sized cross-sectional dimensions.

In regards to claim 3, Passano discloses said connectors are provided as hose bibs.

In regards to claim 5, Passano discloses said male connectors are provided in their cross sectional dimension as substantially round, and sized to allow specific keying with like-shaped female connectors specific to a desired gas distribution system.

In regards to claim 6, Passano discloses said male connectors are provided in their cross sectional dimension as substantially oval, and sized to allow specific keying with like-shaped female connectors specific to a desired gas distribution system.

In regards to claim 13, Passano discloses said male connectors are provided in their cross sectional dimension as substantially of any geometric or non-geometric shape, and sized to allow specific keying with like-shaped female connectors specific to a desired gas distribution system.

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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/US05/21555

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

In regards to claim 14, Passano discloses said connectors further comprise a retention mechanism to discourage or prevent undesired separation of said connectors in use.

In regards to claim 16, Passano discloses said retention mechanism comprises a friction detent system.

In regards to claim 18, Passano discloses a method of delivering one or more specific, desired gases, comprising use of a system of gas connectors that are shaped to be specifically compatible only with like connectors for each specific gas supply in use in a given application.

Claim 4 lacks an inventive step under PCT Article 33(3) as being obvious over Passano in view of US patent 3,432,249, Helvoight.

In regards to claim 4, in Figure 2, Helvoight teaches said hose bibs are provided as tapered male hose bibs to receive mating female tubing or other mating female connectors.

Claims 7-12 lack an inventive step under PCT Article 33(3) as being obvious over Passano in view of US patent 5,725,511, Urrutia.

In regards to claim 7, in Figures 3-11, Urrutia teaches said male connectors are provided in their cross sectional dimension as substantially triangular, and sized to allow specific keying with like-shaped female connectors specific to a desired gas distribution system.

In regards to claim 8, in Figures 3-11, Urrutia teaches said male connectors are provided in their cross sectional dimension as substantially square, and sized to allow specific keying with like-shaped female connectors specific to a desired gas distribution system.

In regards to claim 9, in Figures 3-11, Urrutia teaches said male connectors are provided in their cross sectional dimension as substantially rectangular, and sized to allow specific keying with like-shaped female connectors specific to a desired gas distribution system.

In regards to claim 10, in Figures 3-11, Urrutia teaches said male connectors are provided in their cross sectional dimension as substantially hourglass-shaped, and sized to allow specific keying with like-shaped female connectors specific to a desired gas distribution system.

In regards to claim 11, in Figures 3-11, Urrutia teaches said male connectors are provided in their cross sectional dimension as substantially octagonal, and sized to allow specific keying with like-shaped female connectors specific to a desired gas distribution system.

In regards to claim 12, in Figures 3-11, Urrutia teaches said male connectors are provided in their cross sectional dimension as substantially polygonal, and sized to allow specific keying with like-shaped female connectors specific to a desired gas distribution system.

Claims 15 and 17 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest said retention mechanism comprising screw thread receptors and connectors, or said retention mechanism comprising a mechanical jawrim lock system.

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NOTES TO FORM PCT/ISA/220

These Notes are intended to give the basic instructions concerning the filing of amendments under Article 19. The Notes are based on the requirements of the Patent Cooperation Treaty, the Regulations and the Administrative Instructions under that Treaty. In case of discrepancy between these Notes and those requirements, the latter are applicable. For more detailed information, see also the *PCT Applicant's Guide*, a publication of WIPO.

In these Notes, "Article," "Rule" and "Section" refer to the provisions of the PCT, the PCT Regulations and the PCT Administrative Instructions, respectively.

INSTRUCTIONS CONCERNING AMENDMENTS UNDER ARTICLE 19

The applicant has, after having received the international search report and the written opinion of the International Searching Authority, one opportunity to amend the claims of the international application. It should however be emphasized that, since all parts of the international application (claims, description and drawings) may be amended during the international preliminary examination procedure, there is usually no need to file amendments of the claims under Article 19 except where, e.g. the applicant wants the latter to be published for the purposes of provisional protection or has another reason for amending the claims before international publication. Furthermore, it should be emphasized that provisional protection is available in some States only (see *PCT Applicant's Guide*, Volume I/A, Annexes B1 and B2).

The attention of the applicant is drawn to the fact that amendments to the claims under Article 19 are not allowed where the International Searching Authority has declared, under Article 17(2), that no international search report would be established (see *PCT Applicant's Guide*, Volume I/A, paragraph 296).

What parts of the international application may be amended ?

Under Article 19, only the claims may be amended.

During the international phase, the claims may also be amended (or further amended) under Article 34 before the International Preliminary Examining Authority. The description and drawings may only be amended under Article 34 before the International Preliminary Examining Authority.

Upon entry into the national phase, all parts of the international application may be amended under Article 28 or, where applicable, Article 41.

When ? Within 2 months from the date of transmittal of the international search report or 16 months from the priority date, whichever time limit expires later. It should be noted, however, that the amendments will be considered as having been received on time if they are received by the International Bureau after the expiration of the applicable time limit but before the completion of the technical preparations for international publication (Rule 46.1).

Where not to file the amendments ?

The amendments may only be filed with the International Bureau and not with the receiving Office or the International Searching Authority (Rule 46.2).

Where a demand for international preliminary examination has been/is filed, see below.

How ? Either by cancelling one or more entire claims, by adding one or more new claims or by amending the text of one or more of the claims as filed.

A replacement sheet must be submitted for each sheet of the claims which, on account of an amendment or amendments, differs from the sheet originally filed.

All the claims appearing on a replacement sheet must be numbered in Arabic numerals. Where a claim is cancelled, no renumbering of the other claims is required. In all cases where claims are renumbered, they must be renumbered consecutively (Section 205(b)).

The amendments must be made in the language in which the international application is to be published.

What documents must/may accompany the amendments ?

Letter (Section 205(b)):

The amendments must be submitted with a letter.

The letter will not be published with the international application and the amended claims. It should not be confused with the "Statement under Article 19(1)" (see below, under "Statement under Article 19(1)").

The letter must be in English or French, at the choice of the applicant. However, if the language of the international application is English, the letter must be in English; if the language of the international application is French, the letter must be in French.

NOTES TO FORM PCT/ISA/220 (continued)

The letter must indicate the differences between the claims as filed and the claims as amended. It must, in particular, indicate, in connection with each claim appearing in the international application (it being understood that identical indications concerning several claims may be grouped), whether

- (i) the claim is unchanged;
- (ii) the claim is cancelled;
- (iii) the claim is new;
- (iv) the claim replaces one or more claims as filed;
- (v) the claim is the result of the division of a claim as filed.

The following examples illustrate the manner in which amendments must be explained in the accompanying letter:

1. [Where originally there were 48 claims and after amendment of some claims there are 51]:
"Claims 1 to 29, 31, 32, 34, 35, 37 to 48 replaced by amended claims bearing the same numbers; claims 30, 33 and 36 unchanged; new claims 49 to 51 added."
2. [Where originally there were 15 claims and after amendment of all claims there are 11]:
"Claims 1 to 15 replaced by amended claims 1 to 11."
3. [Where originally there were 14 claims and the amendments consist in cancelling some claims and in adding new claims]:
"Claims 1 to 6 and 14 unchanged; claims 7 to 13 cancelled; new claims 15, 16 and 17 added." or
"Claims 7 to 13 cancelled; new claims 15, 16 and 17 added; all other claims unchanged."
4. [Where various kinds of amendments are made]:
"Claims 1-10 unchanged; claims 11 to 13, 18 and 19 cancelled; claims 14, 15 and 16 replaced by amended claim 14; claim 17 subdivided into amended claims 15, 16 and 17; new claims 20 and 21 added."

"Statement under Article 19(1)" (Rule 46.4)

The amendments may be accompanied by a statement explaining the amendments and indicating any impact that such amendments might have on the description and the drawings (which cannot be amended under Article 19(1)).

The statement will be published with the international application and the amended claims.

It must be in the language in which the international application is to be published.

It must be brief, not exceeding 500 words if in English or if translated into English.

It should not be confused with and does not replace the letter indicating the differences between the claims as filed and as amended. It must be filed on a separate sheet and must be identified as such by a heading, preferably by using the words "Statement under Article 19(1)."

It may not contain any disparaging comments on the international search report or the relevance of citations contained in that report. Reference to citations, relevant to a given claim, contained in the international search report may be made only in connection with an amendment of that claim.

Consequence if a demand for international preliminary examination has already been filed

If, at the time of filing any amendments and any accompanying statement, under Article 19, a demand for international preliminary examination has already been submitted, the applicant must preferably, at the time of filing the amendments (and any statement) with the International Bureau, also file with the International Preliminary Examining Authority a copy of such amendments (and of any statement) and, where required, a translation of such amendments for the procedure before that Authority (see Rules 55.3(a) and 62.2, first sentence). For further information, see the Notes to the demand form (PCT/IPBA/401).

If a demand for international preliminary examination is made, the written opinion of the International Searching Authority will, except in certain cases where the International Preliminary Examining Authority did not act as International Searching Authority and where it has notified the International Bureau under Rule 66.1bis(b), be considered to be a written opinion of the International Preliminary Examining Authority. If a demand is made, the applicant may submit to the International Preliminary Examining Authority a reply to the written opinion together, where appropriate, with amendments before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later (Rule 43bis.1(c)).

Consequence with regard to translation of the international application for entry into the national phase

The applicant's attention is drawn to the fact that, upon entry into the national phase, a translation of the claims as amended under Article 19 may have to be furnished to the designated/elected Offices, instead of, or in addition to, the translation of the claims as filed.

For further details on the requirements of each designated/elected Office, see the *PCT Applicant's Guide*, Volume II.

TENT COOPERATION TREATY

PCT/US2005/021555

RECEIVED

OCT 20 2005

From the INTERNATIONAL BUREAU

PCT

SUTHERLAND ASBILL & BRENNAN LLP

NOTIFICATION CONCERNING SUBMISSION OR TRANSMITTAL OF PRIORITY DOCUMENT

To:

WARREN, William, L.
Sutherland Asbill & Brennan LLP
998 Peachtree Street, NE
Atlanta, Georgia 30309-3998
ETATS-UNIS D'AMERIQUE

(PCT Administrative Instructions, Section 411)

Date of mailing (day/month/year) 11 October 2005 (11.10.2005)	IMPORTANT NOTIFICATION
Applicant's or agent's file reference 18929-0022	
International application No. PCT/US2005/021555	International filing date (day/month/year) 17 June 2005 (17.06.2005)
International publication date (day/month/year)	Priority date (day/month/year) 18 June 2004 (18.06.2004)
Applicant NUPHARMX, LLC et al	

- By means of this Form, which replaces any previously issued notification concerning submission or transmittal of priority documents, the applicant is hereby notified of the date of receipt by the International Bureau of the priority document(s) relating to all earlier application(s) whose priority is claimed. Unless otherwise indicated by the letters "NR", in the right-hand column or by an asterisk appearing next to a date of receipt, the priority document concerned was submitted or transmitted to the International Bureau in compliance with Rule 17.1(a) or (b).
- (If applicable) The letters "NR" appearing in the right-hand column denote a priority document which, on the date of mailing of this Form, had not yet been received by the International Bureau under Rule 17.1(a) or (b). Where, under Rule 17.1(a), the priority document must be submitted by the applicant to the receiving Office or the International Bureau, but the applicant fails to submit the priority document within the applicable time limit under that Rule, the attention of the applicant is directed to Rule 17.1(c) which provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.
- (If applicable) An asterisk (*) appearing next to a date of receipt, in the right-hand column, denotes a priority document submitted or transmitted to the International Bureau but not in compliance with Rule 17.1(a) or (b) (the priority document was received after the time limit prescribed in Rule 17.1(a) or the request to prepare and transmit the priority document was submitted to the receiving Office after the applicable time limit under Rule 17.1(b)). Even though the priority document was not furnished in compliance with Rule 17.1(a) or (b), the International Bureau will nevertheless transmit a copy of the document to the designated Offices, for their consideration. In case such a copy is not accepted by the designated Office as the priority document, Rule 17.1(c) provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.

Priority date

Priority application No.

Country or regional Office
or PCT receiving Office

Date of receipt
of priority document

18 June 2004 (18.06.2004)

60/581,321

US

02 August 2005 (02.08.2005)

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Authorized officer

Althea NEVERS (Fax 338 7010)

Facsimile No. (41-22) 338.70.10

Telephone No. +41 22 338 8392

Facsimile No. +41 22 338 82 70

Form PCT/IB/304 (January 2004)

CL1TM428

18929-0022

1/4

PCT REQUEST

Original (for SUBMISSION)

0	For receiving Office use only	
0-1	International Application No.	
0-2	International Filing Date	
0-3	Name of receiving Office and "PCT International Application"	
0-4	Form PCT/ROH01 PCT Request	
0-4-1	Prepared Using	PCT-SAFE [EASY mode] Version 3.50 (Build 0002.170)
0-5	Petition The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty	
0-6	Receiving Office (specified by the applicant)	United States Patent and Trademark Office (USPTO) (RO/US)
0-7	Applicant's or agent's file reference	18929-0022
I	Title of invention	SPECIFICALLY COMPATIBLE CONNECTORS FOR ADMINISTRATION OF STORED GASES
II	Applicant	
II-1	This person is	applicant only
II-2	Applicant for	all designated States except US
II-4	Name	NUPHARMX, LLC
II-5	Address	309 Pirkle Ferry Road Suite E-400 Cumming, Georgia 30040 United States of America
II-6	State of nationality	US
II-7	State of residence	US
III-1	Applicant and/or inventor	
III-1-1	This person is	applicant and inventor
III-1-2	Applicant for	US only
III-1-4	Name (LAST, First)	PING, Jeffrey, H.
III-1-5	Address	6145 Broadwater Trail Cumming, Georgia 30040 United States of America
III-1-6	State of nationality	US
III-1-7	State of residence	US

PCT REQUEST

Original (for SUBMISSION)

IV-1	Agent or common representative; or address for correspondence The person identified below is hereby/ has been appointed to act on behalf of the applicant(s) before the competent International Authorities as:	agent
IV-1-1	Name (LAST, First)	WARREN, William, L.
IV-1-2	Address	Sutherland Asbill & Brennan LLP 999 Peachtree Street, NE Atlanta, Georgia 30309-3996 United States of America
IV-1-3	Telephone No.	404.853.8000
IV-1-4	Facsimile No.	404.853.8806
IV-1-5	e-mail	bill.warren@sablav.com
IV-1-6	Agent's registration No.	36,714
IV-2	Additional agent(s)	additional agent(s) with same address as first named agent
IV-2-1	Name(s)	PAPPAS, Peter, G. (33,205); WARREN, Daniel, J. (34,272); GRIFFIN III, Malvern, U. (38,899); KING, Kevin, W. (42,737); HAMANN, John, D. (45,527); HENDERSON, Mark, E. (51,144); SILVERIO, William, R. (45,383); WADE, Kathryn, H. (54,682); MILLER, Elizabeth, Cary (54,708); KORN, Russell, A. (54,236); GASKINS, JR., Ralph, E. (50,136); KRAUSE, Michael, I. (53,157); VO, Hoang, M. (47,158)
V	DESIGNATIONS	
V-1	The filing of this request constitutes under Rule 4.1(a), the designation of all Contracting States bound by the PCT on the international filing date, for the grant of every kind of protection available and, where applicable, for the grant of both regional and national patents.	
VI-1	Priority claim of earlier national application	
VI-1-1	Filing date	18 June 2004 (18.06.2004)
VI-1-2	Number	60/581,321
VI-1-3	Country	US
VI-2	Priority document request The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) identified above as item(s):	VI-1

18829-0022

3/4

PCT REQUEST

Original (for SUBMISSION)

VII-1	International Searching Authority Chosen	United States Patent and Trademark Office (USPTO) (ISA/US)	
VIII	Declarations	Number of declarations	
VIII-1	Declaration as to the identity of the inventor	-	
VIII-2	Declaration as to the applicant's entitlement, as at the international filing date, to apply for and be granted a patent	-	
VIII-3	Declaration as to the applicant's entitlement, as at the international filing date, to claim the priority of the earlier application	-	
VIII-4	Declaration of inventorship (only for the purposes of the designation of the United States of America)	-	
VIII-5	Declaration as to non-prejudicial disclosures or exceptions to lack of novelty	-	
IX	Check list	number of sheets	electronic file(s) attached
IX-1	Request (including declaration sheets)	4	/
IX-2	Description	6	-
IX-3	Claims	2	-
IX-4	Abstract	1	/
IX-5	Drawings	3	-
IX-7	TOTAL	16	
	Accompanying items	paper document(s) attached	electronic file(s) attached
IX-6	Fee calculation sheet	/	-
IX-17	PCT-SAFE physical media	-	/
IX-18	Figure of the drawings which should accompany the abstract		
IX-20	Language of filing of the international application	English	
X-1	Signature of applicant, agent or common representative		
X-1-1	Name (LAST, First)	WARREN, William, L.	
X-1-2	Name of signatory		
X-1-3	Capacity		

45

18928-0022

4/4

PCT REQUEST

Original (for SUBMISSION)

FOR RECEIVING OFFICE USE ONLY

10-1	Date of actual receipt of the purported international application	
10-2	Drawings:	
10-2-1	Received	
10-2-2	Not received	
10-3	Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application	
10-4	Date of timely receipt of the required corrections under PCT Article 11(2)	
10-5	International Searching Authority	ISA/US
10-6	Transmittal of search copy delayed until search fee is paid	

FOR INTERNATIONAL BUREAU USE ONLY

11-1	Date of receipt of the record copy by the International Bureau	
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AS: 102.827

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REGISTRO DE PATENTES DE INVENCION Y MODELO DE UTILIDAD
Nº: 07-003881-00000-0000
FE: 2007-01-16 17:23:56 Dep. 2007 NUESTROS ALCANCES
IN. 11 PATENTE IN
EVO: 3/0 FASE NACIONAL
ACT 411 PRESENTACION Fecha: 4/5

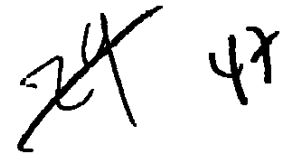
ión

**FORMULARIO ÚNICO DE SOLICITUD DE PATENTE
PCT
ENTRADA EN FASE NACIONAL**

1 SOLICITUD DE:			
☒ Patente de Invención.		☐ Patente de Modelo de Utilidad.	
☐ Capítulo I.		☒ Capítulo II.	
2 SOLICITANTE (71)	Nombre: THE BOC GROUP, INC. Dirección: 575 Mountain Avenue, Murray Hill, 07974 New Jersey, Estados Unidos de América Lugar de Constitución: Estados Unidos Teléfono: Fax: E-mail:		IDENTIFICACION C.C. ☐ NIT ☐ C.E. ☐ Otro ☐ Número Cual _____
3 REPRESENTANTE O APODERADO	Nombre: JUAN PABLO CADENA SARMIENTO Dirección: Cra. 7 No. 71-21 Torre B – Piso 4 Teléfono: 744-2200 Fax: 742-2200 E-mail:		IDENTIFICACION C.C. ☒ NIT ☐ C.E. ☐ Otro ☐ Número 80.410.337 TP 57492
4 INVENTOR (ES) (72)	Nombre: Jeffrey H. Ping Dirección: 6145 Broadwater Trail, Cumming, Georgia 30040, Estados Unidos de América Nacionalidad o Domicilio: Estados Unidos de América		
5 PCT (88) Solicitud Internacional No. <u>PCT/US2005/021555</u> Fecha <u>17-08-2005</u> Publicación Internacional No. <u>WO 2006/009885 A2</u> Fecha <u>28-01-2006</u>			
Título (54): <u>CONECTORES ESPECÍFICAMENTE COMPATIBLES PARA ADMINISTRACIÓN DE GASES ALMACENADOS</u>			
7 Clasificación Internacional (51) _____			
8 Prioridad	(33) País de Origen	(32) Fecha	(31) Número de Solicitud
SI ☒ NO ☐	US	18-06-2004	60/581,321
9 Comprobante de pago No. <u>07-503</u> Fecha <u>16-01-2007</u>			

Instrucciones para el diligenciamiento del presente formulario, ver reverso de esta página.

2020-F06 (01-11-15)



REIVINDICACIONES

REIVINDICAMOS:

1. Un sistema de conectores para uso en sistemas de distribución de gas, en donde dichos conectores se configuran para ser específicamente compatibles únicamente con conectores similares para un abastecimiento de gas específico en uso en una aplicación dada.
2. El sistema de la reivindicación 1, en donde dichos conectores se proveen como conectores compañeros machos y/o hembras, con dimensiones de sección transversal de tamaño y forma similares.
3. El sistema de la reivindicación 1, en donde dichos conectores se proveen como grifos de manguera.
4. El sistema de la reivindicación 3, en donde dichos grifos de manguera se proveen como grifos de manguera machos cónicos para recibir tubería hembra compañera u otros conectores hembra compañeros.
5. El sistema de la reivindicación 2, en donde dichos conectores machos se proveen en su dimensión de sección transversal como sustancialmente redondos, y se dimensionan para permitir un enchavetado específico con conectores específicos hembra, de igual configuración, a un sistema de distribución de gas deseado.
6. El sistema de la reivindicación 2, en donde dichos conectores macho se proveen en su dimensión de corte transversal como sustancialmente ovales y se dimensionan para permitir un enchavetado específico con conectores específicos hembra, de igual configuración, a un sistema de distribución de gas deseado.

Industria y Comercio
SUPERINTENDENCIA

REQUISITOS MINIMOS PARA ADMISION A TRAMITE
PCT

PATENTE DE INVENCION

☒

MODELO DE UTILIDAD ☐

- ◆ Indicación de que se solicita la concesión de una patente ☒
- ◆ Datos de identificación del solicitante o de la persona que presenta la solicitud ☒
- ◆ Descripción de la invención ☒
- ◆ Dibujos de ser estos pertinentes ☒
- ◆ Comprobante de pago de las tasas establecidas ☒

COMPLETA ☒

INCOMPLETA ☐

DISEÑO INDUSTRIAL ☐

- ◆ Indicación de que se solicita el registro de Diseño Industrial ☐
- ◆ Datos de identificación del solicitante o de la persona que presenta la solicitud ☐
- ◆ Representación gráfica y fotográfica del Diseño Industrial o muestra del material que incorpora el diseño ☐
- ◆ Comprobante de pago de las tasas establecidas ☐

COMPLETA ☐

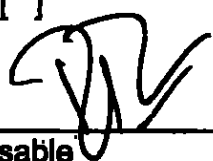
INCOMPLETA ☐

ESQUEMA DE TRAZADO ☐

- ◆ Indicación de que se solicita el registro de un Esquema de Trazado ☐
- ◆ Datos de identificación del solicitante o de la persona que presenta la solicitud ☐
- ◆ Representación gráfica del esquema trazado ☐
- ◆ Comprobante de pago de las tasas establecidas ☐

COMPLETA ☐

INCOMPLETA ☐

Firma Responsable 

16 ENE 2007

Fecha _____

Carrera 13 No. 27-00 Piso 5, 7 y 10
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E-mail: Info@sic.gov.co
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Bogotá, D.C., Colombia

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REPUBLICA DE COLOMBIA
SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

Bogotá,
2020

Doctor(a)
CADENA SARMIENTO JUAN PABLO

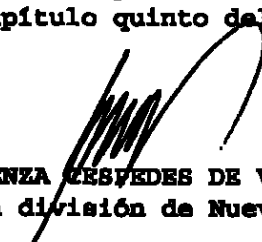
REFERENCIA	Radicación No.	7 3861
	Solicitud internacional	PCT/US2005/021555
	Fecha inicio fase nacional	18/01/2007
	Trámite	11
	Evento	379
	Actuación	430
	Oficio No.	2575

Como resultado del examen de forma, realizado con fundamento en el artículo 38 de la Decisión 486 de la Comisión de la Comunidad Andina, artículo 27 del Tratado de Cooperación en Materia de Patentes (PCT), regla 51 bis del Reglamento y Circular Única de la Superintendencia de Industria y Comercio, se le comunica que:

1. Si fuere el caso, el solicitante debe adjuntar la traducción de los anexos del reporte de examen preliminar internacional (Art. 36.2.b) del tratado PCT.
2. La solicitud no contiene la copia del documento en que consta la cesión del derecho a la patente del inventor al solicitante o a su causante. (Art. 26-k) Decisión 486.
3. La solicitud no contiene el poder debidamente otorgado, con el lleno de los requisitos exigidos por los artículos 63 y subsiguientes del Código de Procedimiento Civil. Adicionalmente, deberá presentar el documento que acredita la existencia y representación legal de la sociedad solicitante, cuando ésta fuere persona jurídica.

En cumplimiento de lo dispuesto por el artículo 39 de la Decisión 486, se le requiere para que dentro del término de dos meses siguientes a la fecha de notificación del presente oficio, complete los requisitos anteriormente enunciados. En caso de no dar cumplimiento al presente requerimiento, la solicitud se considerará abandonada y perderá su prelación.

Notifíquese el presente oficio conforme a lo dispuesto en el numeral 5.2, literal e), del capítulo quinto del título primero de la Circular Única No.10 de 2001.


ALIX CARMENZA CESPEDES DE VERGEL
Jefe de la división de Nuevas Creaciones

El anterior requerimiento fue notificado por fijación en lista de fecha 23 FEB. 2007 a las 14 horas.