

ESCOBAR - URIBE ASOCIADOS

A B O G A D O S

Carrera 11A No. 94 76 OC305 PO Box 94948, Bogotá, D.C. Colombia

Tels. (571) 6162051 Fax (571) 6161889

www.escobaruribe.com info@escobaruribe.com

43 48

2959/1º

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO DIVISION DE NUEVAS CREACIONES

E.

S.

D.

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO
Rad- 06-031933- 00001-0000
Pac 2006-03-24 143204 Dep. 2020 NUEVAS CREACIONES
Tra. 2 PATENTES
Eje 1 REGISTRO
Act 444 RESPUESTA REGUE Folio 41

Rcf Expediente No 06 031 933
Solicitud de Patente a nombre de
Ethicon, Inc.

Yo, JIMENA ESCOBAR URIBE, identificada como aparece al pie de mi firma, domiciliada en la Carrera 11 A No 94-76, of 305 obrando como apoderada de la sociedad Ethicon, Inc, domiciliada en Somerville, New Jersey, Estados Unidos de America, solicitante de la patente de la referencia, en respuesta al oficio No 4554 notificado por fijación en lista el día 27 de abril de 2006, me permito presentar los siguientes documentos

- 1 Los artes finales en tamaño 12 x 12 centímetros (por duplicado) de la figura característica
- 2 Copia certificada de la solicitud de Patente numero 11/096,060 presentada en Estados Unidos de America el día 31 de marzo de 2005, con la debida traduccion de lo pertinente incluyendo el capitulo reivindicatorio
- 3 Documento (1) en que consta la cesion del derecho a la patente otorgada por los inventores a favor de mi mandante.

Sobre el particular, es importante resaltar que de conformidad con las normas legales vigentes, artículo 1 de la Resolución 210 de 2001, expedida por el Superintendente de Industria y Comercio y artículo 2 de la Convencion de la Haya, el documento en ingles que se pretenda aportar como parte de los tramites de propiedad industrial ante la Superintendencia de Industria y Comercio no requieren traduccion. Por otro lado, la legalizacion consular y/o diplomatica de los documentos expedidos en el extranjero no es necesaria. Por lo tanto, el documento de cesion anexo a este memorial es validamente presentado en idioma ingles y con la correspondiente Apostilla.

Espero con esto haber dado cabal cumplimiento a lo solicitado por ese despacho y de conformidad con lo indicado en los articulos 3º, inciso 3, 35, inciso 2 y 59, inciso 2 del CCA, al analizar este memorial atentamente ruego se traten todas las cuestiones planteadas con motivo del mismo.

Señor Superintendente,


JIMENA ESCOBAR URIBE
C.C.39 779 452 de Usaquén
T P 68228
Cod. 5376

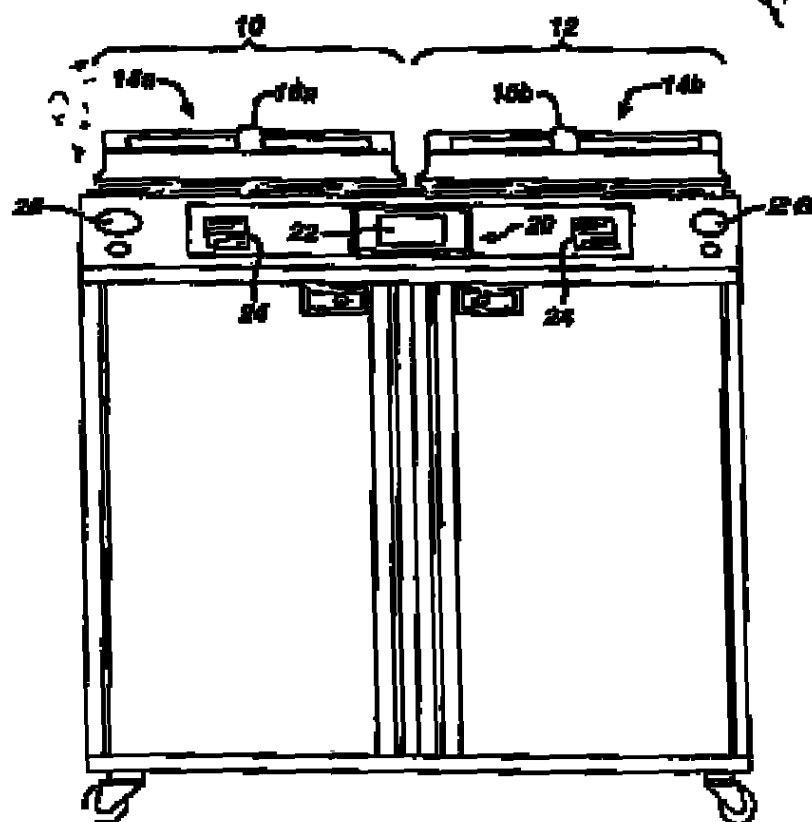
121

Safe final foto 48

FIG. 1

~~100~~
105

44



45
APOSTILLE

(CONVENTION DE LA HAYE DU 5 OCTOBRE 1961)

- 1 COUNTRY UNITED STATES OF AMERICA
- 2 THIS PUBLIC DOCUMENT HAS BEEN SIGNED BY
CHRISTINA A CLICKNER
- 3 ACTING IN THE CAPACITY OF
NOTARY PUBLIC OF NEW JERSEY
- 4 BEARS THE SEAL/STAMP OF
CHRISTINA A CLICKNER NOTARY

CERTIFIED

- 5 AT TRENTON NEW JERSEY
- 6 THE 11TH DAY OF MAY 2006
- 7 BY Bradley I. Abelow NEW JERSEY TREASURER
- 8 NO A259612
- 9 SEAL/STAMP
- 10 SIGNATURE



Bradley I. Abelow

ASPS026CONF(L)

CERTIFICATION

I hereby certify that I have compared the attached document with the original, and that such said document is a true copy of the original Assignment document as filed in the U S Patent Office in connection with USSN 11/096,060 filed MARCH 31, 2005



Christina A. Clickner
(Notary Public of New Jersey)
My Commission Expires
March 2, 2010

A S S I G N M E N T

Serial No
Filed March 31, 2005

WHEREAS, Richard Jackson and Harold R Williams residing at 3372 Sparklar Drive, Huntington Beach, CA 92649 and 1223 Llano Street, San Clemente, CA 92673 respectively (hereinafter called "Assignors"), have made certain new and useful inventions or discoveries relating to

AUTOMATED ENDOSCOPE REPROCESSOR CONNECTION INTEGRITY TESTING VIA LIQUID SUCTION

for which they have on the day of , 200 executed an application for Letters Patent of the United States and

WHEREAS Ethicon Inc, a corporation of the State of New Jersey, (hereinafter called "Assignee"), is desirous of acquiring Assignors entire right, title, and interest therein

NOW THEREFORE, BE IT KNOWN that for and in consideration of the sum of One Dollar and other valuable considerations, the receipt of which is hereby acknowledged Assignors have sold, assigned and transferred, and do hereby sell, assign and transfer unto said Assignee their entire right, title and interest in and to all said inventions and discoveries disclosed in said application whose identification above by serial number and filing date, when available is hereby authorized, and in and to said application, all substitutions, divisions, and continuations thereof, and in and to all Letters Patent, United States and foreign that may be granted for said inventions and discoveries, and in and to all extensions, renewals, and reissues thereof the same to be held and enjoyed by said Assignee, its successors and assigns, as fully and entirely as the same would have been held and enjoyed by Assignors if this Assignment and sale had not been made

And Assignors hereby authorize and request the Commissioner of Patents of the United States to issue said Letters Patent in accordance with this Assignment

And for the consideration aforesaid, Assignors covenant and agree with said Assignee that he has a full and unencumbered title to the inventions and discoveries above described and hereby assigned, which title they warrant unto said Assignee, its successors and assigns,

48 ~~62~~ #

And for the consideration aforesaid, Assignors further covenant and agree that they will, whenever requested but without cost to them promptly communicate to said Assignee or its representatives any facts known to them relating to said inventions and discoveries, testify in any interference or legal proceedings involving said inventions and discoveries, and execute any additional papers that may be necessary to enable said Assignee or its representatives, successors, nominees, or assigns to secure full and complete protection for the said inventions and discoveries or that may be necessary to vest in said Assignee the complete title to the said inventions and discoveries and patents hereby conveyed and to enable it to record said title

IN TESTIMONY WHEREOF, Assignors have hereunto set their hands and seals this 28 day of APRIL, 2005



Richard Jackson (L S)

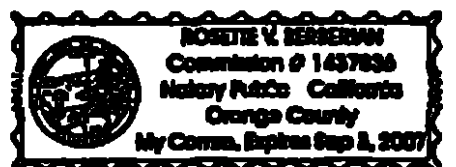

Harold R Williams (L S)

STATE OF California
COUNTY OF Orange ss

BE IT REMEMBERED, That on this 28th day of April, 2005, before me, a Notary Public, personally appeared Richard Jackson and Harold R Williams, who I am satisfied are the persons named in and who executed the foregoing instrument in my presence, and I having first made known to them the contents thereof, they did acknowledge that they signed sealed, and delivered the same as their voluntary act and deed for the uses and purposes therein expressed



Notary Public



21

ESTADOS UNIDOS DE AMERICA
A TODOS AQUELLOS A QUIENES EL PRESENTE LLEGUE

DEPARTAMENTO DE COMERCIO DE LOS ESTADOS
UNIDOS
Oficina de Patentes y Marcas de los Estados Unidos

12 de abril de 2006

La presente es para certificar que el anexo es una copia fiel de los registros de la Oficina de Patentes y Marcas de los Estados Unidos, de los documentos de la solicitud de patente identificada mas adelante, que cumplieron con los requerimientos para concederse una fecha de presentacion de acuerdo con 35 USC 111

Numero de Solicitud 11/096,060

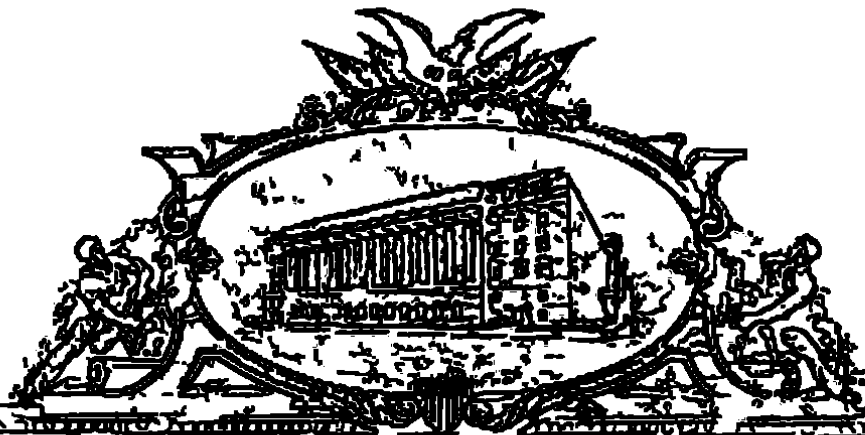
Fecha de Presentacion 31 de marzo de 2005

EL CÓDIGO DE PAÍS Y EL NUMERO DE SU SOLICITUD DE PRIORIDAD, PARA SER USADA EN LA PRESENTACION EXTRANJERA BAJO EL CONVENIO DE PARÍS ES US11/096,060

Por la autoridad de
Bajo el Secretario de Comercio para la Propiedad Intelectual y el Director de la Oficina de Patentes y Marcas de los Estados Unidos de América

(fdo) P SWAIN
Oficial Certificador
Sello oficial de la Oficina de Patentes y Marcas de los Estados Unidos de América

50-54



PS 757730

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

April 12, 2006

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

APPLICATION NUMBER. 11/096,060

FILING DATE March 31, 2005

THE COUNTRY CODE AND NUMBER OF YOUR PRIORITY APPLICATION, TO BE USED FOR FILING ABROAD UNDER THE PARIS CONVENTION, IS US11/096,060

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



P. SWAIN

Certifying Officer

51-55

UTILITY PATENT APPLICATION TRANSMITTAL		Attorney Docket No.	ASP-8026USNP
		First Inventor	Richard Jackson, Harold R. Williams
		Title	AUTOMATED ENDOSCOPE REPROCESSOR CONNECTION INTEGRITY TESTING VIA LIQUID SUCTION
		Express Mail Label No.	EL861542384US
APPLICATION ELEMENTS		ADDRESS TO	
MPEP Chapter 809 concerning utility patent application contents.		Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450	
1 ☒ Fee Transmittal Form (e.g. PTO/SB/17) (submit an original and a duplicate for fee processing)		7 ☐ CD-ROM or CD-R in duplicate large table or Computer Program (Appendix)	
2 ☐ Applicant claims small entity status.		8. Nucleotide and/or Amino Acid Sequence Submission (if applicable all necessary)	
3 ☒ Specification [Total Pages 21] (Preferred arrangement set forth below) Descriptive Title of the Invention Cross Reference to Related Applications Statement Regarding Fed sponsored R&D Reference to sequence listing, a table, or a computer program listing appendix - Background of the Invention Brief Summary of the Invention Brief Description of the Drawings (if filed) Detailed Description Claim(s) Abstract of the Disclosure		a. ☐ Computer Readable Form (CRF) b. ☐ Specification Sequence Listing on: i. ☐ CD ROM or CD R (2 copies) or ii. ☐ paper c. ☐ Statement verifying identity of above copies	
4 ☒ Drawing(s) (35 USC 113) [Total Sheets 3]		ACCOMPANYING APPLICATION PARTS	
5 Oath or Declaration [Total Pages 3] a. ☒ unexecuted (original or copy) b. ☐ Copy from a prior application (37 CFR 1.58(k)) (for continuation/divisional with Box 18 completed) i. ☐ DELETION OF INVENTOR(S) Signed statement attached deleting inventor(s) named in the prior application, see 37 CFR 1.53(d)(2) and 1.53(b)		9. ☐ Assignment Papers (cover sheet & document(s)) 10. ☐ 37 CFR § 73(b) Statement ☐ Power of Attorney (when there is an assignee) 11. ☐ English Translation Document (if applicable) 12. ☐ Information Disclosure Statement (IDS)/PTO-1449 ☐ Copies of IDS Citations 13. ☐ Preliminary Amendment 14. ☒ Return Receipt Postcard (MPEP 503) (Should be specifically itemized) 15. ☐ Certified Copy of Priority Document(s) (if foreign priority is claimed) 16. ☐ Request and Certifications under 35 U.S.C. 122 (b)(2)(B)(i) Applicant must attach form PTO/SB/35 or its equivalent. 17. ☐ Other	
6. ☐ Application Data Sheet See 37 CFR 1.76			
18. ☐ If a CONTINUING APPLICATION check appropriate box and supply the requested information below and in a preliminary amendment, or in an Application Data Sheet under 37 CFR 1.76: ☐ Continuation ☐ Divisional ☐ Continuation-In Part (CIP) of prior application No. filed Prior application information: Examiner Group Art Unit: For CONTINUATION or DIVISIONAL APPS only The entire disclosure of the prior application from which an oath or declaration is supplied under Box 5b is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.			
19. CORRESPONDENCE ADDRESS ☒ Customer Number or Bar Code Label 000027777 or ☐ Correspondence Address below			
Name Philip S. Johnson, Esq. Address Johnson & Johnson One Johnson & Johnson Plaza New Brunswick, NJ 08833-7003 USA			
20. TELEPHONE CONTACT Please direct all telephone calls or telefaxes to Andrew C. Farmer at: Telephone: (732) 524-2825 Fax: (732) 524-2808			
21. SIGNATURE OF APPLICANT, ATTORNEY OR AGENT REQUIRED			
NAME	Andrew C. Farmer Reg No 35 868		
SIGNATURE			
DATE	March 31, 2005		

11 MAR 15 PTO
11/096080

507-11
11/096080

5236

FEE TRANSMITTAL	<i>Complete if Known</i>	
	Application Number	
	Filing Date	March 31 2005
	First Named Inventor	Richard Jackson, Harold R. Williams
	Group Art Unit	
	Examiner Name	
	Attorney Docket Number	ASP-5026USNP

FEE CALCULATION

CLAIMS AS FILED

(1)	(2)	(3)	(4)	(5)
FOR	NUMBER FILED	NUMBER EXTRA	RATE	BASIC FEE \$300.00
TOTAL CLAIMS	0 20 =	0	x 50.00	\$ 0.00
INDEPENDENT CLAIMS	0 3 =	0	x 200.00	\$ 0.00
SEARCH FEE	NA	NA	NA	\$ 500.00
EXAMINATION FEE	NA	NA	NA	\$ 200.00
APPLICATION SIZE FEE (If the specification and drawings exceed 100 sheets of paper the application size fee due is \$255 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(b) and 37 CFR 1.10(c).	0 100 =		x 5.00 (for each additional sheet over 100)	\$
MULTIPLE DEPENDENT CLAIM ☒		N/A	\$360.00	
			TOTAL FEES	\$ 1000.00

METHOD OF PAYMENT

- ☒ Please charge Deposit Account No 10-0750/ASP-5026USNP/ACF in the amount of \$1 000.00. Three copies of this sheet are enclosed.
- ☒ The Commissioner is hereby authorized to charge any additional fees which may be required in connection with the filing of this communication, or credit any overpayment, to Account No. 10-0750/ASP-5026USNP/ACF. Three copies of this sheet are enclosed.

SUBMITTED BY:		<i>Complete (if applicable)</i>
Typed or Printed Name	Andrew C. Farmer	Reg. No. 35,868
Signature		Deposit Account No. 10-0750
	Date March 31 2005	

53 ~~42~~

9

DOCKET NO ASP-5026USNP

**IN THE UNITED STATES
PATENT AND TRADEMARK OFFICE**

Applicant Richard Jackson et al

For AUTOMATED ENDOSCOPE REPROCESSOR CONNECTION
INTEGRITY TESTING VIA LIQUID SUCTION

Express Mail Certificate

"Express Mail" mailing number EL961542384US

Date of Deposit March 31 2005

I hereby certify that this complete application including specification pages claims, drawings and an unexecuted Declaration and Power of Attorney, is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to the Commissioner for Patents, P O Box 1450, Alexandria VA 22313-1450

Laurie Phillips

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

/Laurie Phillips/

(Signature of person mailing paper or fee)

**AUTOMATED ENDOSCOPE REPROCESSOR
CONNECTION INTEGRITY TESTING
VIA LIQUID SUCTION**

BACKGROUND OF THE INVENTION

The present invention relates to the decontamination arts including the sterilization arts. It finds particular application in conjunction with the decontamination of medical devices, especially medical devices such as endoscopes and other devices having channels or lumens that must be decontaminated after use.

Endoscopes and similar medical devices having channels or lumens formed therethrough are being used on an ever increasing basis in the performance of medical procedures. The popularity of these devices has led to calls for improvements in the decontamination of these devices between use, both in terms of the speed of the decontamination and the effectiveness of the decontamination.

One popular method for cleaning and disinfection or sterilization of such endoscopes employs an automated endoscope reprocessor which both washes and then disinfects or sterilizes the endoscope. Typically such a unit comprises a basin with a selectively opened and closed cover member to provide access to the basin. Pumps connect to various channels through the endoscope to flow fluid therethrough and an additional pump flows fluid over the exterior surfaces of the endoscope. Typically a detergent washing cycle is followed by rinsing and then a sterilization or disinfection cycle and rinse. Various connections must be made to the endoscope to achieve flow through its channels. If any of the connections leaks the process may not work properly possibly leaving the endoscope contaminated. Typically such automated systems check for blockages in the channels but such testing can be fooled if one of the connections is not tight.

SUMMARY OF THE INVENTION

In a cleaning or disinfection procedure of an endoscope having a channel the present invention provides a method of detecting proper connection of a fixture to the channel and proper flow through the channel. The endoscope has a fixture connected to a first opening into the channel and the channel has a second opening. The method comprises the steps of: a) placing the endoscope at the second opening into a liquid, b) applying negative pressure at the first opening for a time period, c) drawing liquid up into the channel from the second opening, d) passing the liquid out of the channel through the first opening, and e) measuring the amount of liquid passed out of the first opening and determining based upon the amount whether the fixture is connected properly and proper flow is passing through the channel.

Preferably at least a portion of the channel contains air prior to the step of applying negative pressure. A constant volume pump can be employed to apply negative pressure at the first opening.

Steps b) through e) can be repeated for one or more additional channels.

Preferably the step of measuring the amount of liquid passed out of the first opening comprises directing that liquid into a measuring device.

Preferably the negative pressure is applied for a predetermined length of time and the amount of liquid passed out of the first opening is compared to a predetermined amount.

Preferably the second opening is at a distal end of an endoscope.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention may take form in various components and arrangements of components and in various steps and arrangements of steps. The drawings are for purposes of illustrating preferred embodiments only and are not to be construed as limiting the invention.

FIG. 1 is a front elevational view of a decontamination apparatus in accordance with the present invention.

FIG. 2 is a diagrammatic illustration of the decontamination apparatus shown in FIG. 1 with only a single decontamination basin shown for clarity and

FIG. 3 is a cut-away view of an endoscope suitable for processing in the decontamination apparatus of FIG. 1.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

FIG. 1 shows a decontamination apparatus for decontaminating endoscopes and other medical devices which include channels or lumens formed therethrough. FIG. 2 shows the apparatus in block diagram form. The decontamination apparatus generally includes a first station 10 and a second station 12 which are at least substantially similar in all respects to provide for the decontamination of two different medical devices simultaneously or in series. First and second decontamination basins 14a, 14b receive the contaminated devices. Each basin 14a, 14b is selectively sealed by a lid 16a, 16b respectively preferably in a microbe blocking relationship to prevent the entrance of environmental microbes into the basins 14a, 14b during decontamination operations. The lids can include a microbe removal or HEPA air filter formed therein for venting.

A control system 20 includes one or more microcontrollers such as a programmable logic controller (PLC) for controlling decontamination and user interface operations. Although one control system 20 is shown herein as controlling

57 48

both decontamination stations 10, 12, those skilled in the art will recognize that each station 10, 12 can include a dedicated control system. A visual display 22 displays decontamination parameters and machine conditions for an operator and at least one printer 24 prints a hard copy output of the decontamination parameters for a record to be filed or attached to the decontaminated device or its storage packaging. The visual display 22 is preferably combined with a touch screen input device. Alternatively, a keypad or the like is provided for input of decontamination process parameters and for machine control. Other visual gauges 26 such as pressure meters and the like provide digital or analog output of decontamination or medical device leak testing data.

FIG 2 diagrammatically illustrates one station 10 of the decontamination apparatus. Those skilled in the art will recognize that the decontamination station 12 is preferably similar in all respects to the station 10 illustrated in FIG 2. However the station 12 has not been shown in FIG 2 for clarity. Further the decontamination apparatus can be provided with a single decontamination station or multiple stations.

The decontamination basin 14a receives an endoscope 200 (see FIG 3) or other medical device therein for decontamination. Any internal channels of the endoscope 200 are connected with flush lines 30. Each flush line 30 is connected to an outlet of a pump 32. The pumps 32 are preferably peristaltic pumps or the like that pump fluid, such as liquid and air through the flush lines 30 and any internal channels of the medical device. Specifically the pumps 32 either can draw liquid from the basin 14a through a filtered drain 34 and a first valve S1 or can draw decontaminated air from an air supply system 36 through a valve S2. The air supply system 36 includes a pump 38 and a microbe removal air filter 40 that filters microbes from an incoming air stream. It is preferable that each flush line 30 be provided with a dedicated pump 32 to ensure adequate fluid pressure and to facilitate the individual monitoring of the fluid pressure in each flush line 30. A pressure switch or sensor 42 is in fluid communication with each flush line 30 for sensing excessive pressure in the flush line. Any excessive pressure sensed is indicative of a partial or complete blockage, e.g. by bodily tissue or dried bodily fluids in a device channel to which the relevant flush line 30 is connected. The isolation of each flush line 30 relative to the others allows the particular blocked

channel to be easily identified and isolated, depending upon which sensor 42 senses excessive pressure.

5 The basin 14a is in fluid communication with a water source 50 such as a utility or tap water connection including hot and cold inlets and a mixing valve 52 flowing into a break tank 56. A microbe removal filter 54 such as a 0.2 μ m or smaller absolute pore size filter decontaminates the incoming water which is delivered into the break tank 56 through the air gap to prevent backflow. A pressure type level sensor 59
10 monitors liquid levels within the basin 14a. An optional water heater 53 can be provided if an appropriate source of hot water is not available.

The condition of the filter 54 can be monitored by directly monitoring the flow rate of water therethrough or indirectly by monitoring the basin fill time using a float switch or the like. When the flow rate drops below a select threshold, this indicates a
15 partially clogged filter element that requires replacement.

A basin drain 62 drains liquid from the basin 14a through an enlarged helical tube 64 into which elongated portions of the endoscope 200 can be inserted. The drain 62 is in fluid communication with a recirculation pump 70 and a drain pump 72. The
20 recirculation pump 70 recirculates liquid from the basin drain 62 to a spray nozzle assembly 60 which sprays the liquid into the basin 14a and onto the endoscope 200. Coarse and fine screens 71 and 73 respectively filter out particles in the recirculating fluid. The drain pump 72 pumps liquid from the basin drain 62 to a utility drain 74. A level sensor 76 monitors the flow of liquid from the pump 72 to the utility drain 74.
25 The pumps 70 and 72 can be simultaneously operated such that liquid is sprayed into the basin 14a while it is being drained to encourage the flow of residue out of the basin and off of the device. Of course a single pump and a valve assembly could replace the dual pumps 70 72.

30 An inline heater 80 with temperature sensors 82, downstream of the recirculation pump 70 heats the liquid to optimum temperatures for cleaning and disinfection. A pressure switch or sensor 84 measures pressure downstream of the circulation pump 70.

59/12

Detergent solution 86 is metered into the flow upstream of the circulation pump 70 via a metering pump 88. A float switch 90 indicates the level of detergent available. Typically only a small amount of disinfectant 92 is required. To more accurately meter this, a dispensing pump 94 fills a pre-chamber 96 under control of a hi/low level switch 98 and of course the control system 20. A metering pump 100 meters a precise quantity of disinfectant as needed.

Endoscopes and other reusable medical devices often include a flexible outer housing or sheath surrounding the individual tubular members and the like that form the interior channels and other parts of the device. This housing defines a closed interior space, which is isolated from patient tissues and fluids during medical procedures. It is important that the sheath be maintained intact, without cuts or other holes that would allow contamination of the interior space beneath the sheath. Therefore, the decontamination apparatus includes means for testing the integrity of such as sheath.

An air pump, either the pump 38 or another pump 110, pressurizes the interior space defined by the sheath of the device through a conduit 112 and a valve S5. Preferably a HEPA or other microbe-removing filter 113 removes microbes from the pressurizing air. An overpressure switch 114 prevents accidental over pressurization of the sheath. Upon full pressurization the valve S5 is closed and a pressure sensor 116 looks for a drop in pressure in the conduit 112 which would indicate the escape of air through the sheath. A valve S6 selectively vents the conduit 112 and the sheath through an optional filter 118 when the testing procedure is complete. An air buffer 120 smoothes out pulsation of pressure from the air pump 110.

Preferably each station 10 and 12 each contain a drip basin 130 and spill sensor 132 to alert the operator to potential leaks.

An alcohol supply 134 controlled by a valve S3 can supply alcohol to the channel pumps 32 after rinsing steps to assist in removing water from the endoscope channels.

5 Flow rates in the supply lines 30 can be monitored via the channel pumps 32 and the pressure sensors 42. The channels pumps 32 are peristaltic pumps which supply a constant flow. If one of the pressure sensors 42 detects too high a pressure the associated pump 32 cycles off. The flow rate of the pump 32 and its percentage on
10 time provide a reasonable indication of the flow rate in an associated line 30. These flow rates are monitored during the process to check for blockages in any of the endoscope channels. Alternatively the decay in the pressure from the time the pump 32 cycles off can also be used to estimate the flow rate with faster decay rates being associated with higher flow rates.

15 A more accurate measurement of flow rate in an individual channel may be desirable to detect more subtle blockages. A metering tube 136 having a plurality of level indicating sensors 138 fluidly connects to the inputs of the channel pumps 32. One preferred sensor arrangement provides a reference connection at a low point in the metering tube and a plurality of sensors 138 arranged vertically thereabove. By passing
20 a current from the reference point through the fluid to the sensors 138 it can be determined which sensors 138 are immersed and therefore determine the level within the metering tube 136. Other level sensing techniques can be applied here. By shutting valve S1 and opening a vent valve S7 the channel pumps 32 draw exclusively from the metering tube. The amount of fluid being drawn can be very accurately determined
25 based upon the sensors 138. By running each channel pump in isolation the flow therethrough can be accurately determined based upon the time and the volume of fluid emptied from the metering tube.

In addition to the input and output devices described above all of the electrical
30 and electromechanical devices shown are operatively connected to and controlled by the control system 20. Specifically and without limitation the switches and sensors 42, 59, 76, 84, 90, 98, 114, 116, 132 and 136 provide input I to the microcontroller 28 which controls the decontamination and other machine operations in accordance

61 85 28

therewith. For example, the microcontroller 28 includes outputs O that are operatively connected to the pumps 32, 38 70 72 88 94 100, 110 the valves S1 S7 and the heater 80 to control these devices for effective decontamination and other operations

Turning also to FIG 3, an endoscope 200 has a head part 202 in which openings 204 and 206 are formed and in which during normal use of the endoscope 200 an air/water valve and a suction valve are arranged. A flexible insertion tube 208 is attached to the head part 202, in which tube a combined air/water channel 210 and a combined suction/biopsy channel 212 are accommodated.

A separate air channel 213 and water channel 214, which at the location of a joining point 216 merge into the air/water channel 210 are arranged in the head part 202. Furthermore a separate suction channel 217 and biopsy channel 218 which at the location of the joining point 220 merge into the suction/biopsy channel 212, are accommodated in the head part 202

In the head part 202, the air channel 213 and the water channel 214 open into the opening 204 for the air/water valve. The suction channel 217 opens into the opening 206 for the suction valve. Furthermore, a flexible feed hose 222 connects to the head part 202 and accommodates channels 213, 214 and 217 which via the openings 204 and 206 are connected to the air channel 213 the water channel 214 and the suction channel 217 respectively. In practice the feed hose 222 is also referred to as the light-conductor casing.

The mutually connecting channels 213 and 213 214 and 214 217 and 217 will be referred to below overall as the air channel 213 the water channel 214 and the suction channel 217

A connection 226 for the air channel 213 connections 228 and 228a for the water channel 214 and a connection 230 for the suction channel 217 are arranged on the end section 224 (also referred to as the light conductor connector) of the flexible hose 222. When the connection 226 is in use, connection 228a is closed off. A connection 232 for the biopsy channel 218 is arranged on the head part 202

A channel separator 240 is shown inserted into the openings 204 and 206. It comprises a body 242 and plug members 244 and 246 which occlude respectively openings 204 and 206. A coaxial insert 248 on the plug member 244 extends inwardly of the opening 204 and terminates in an annular flange 250 which occludes a portion of the opening 204 to separate channel 213 from channel 214. By connecting the lines 30 to the openings 226, 228, 228a, 230 and 232, liquid for cleaning and disinfection can be flowed through the endoscope channels 213, 214, 217 and 218 and out of a distal tip 252 of the endoscope 200 via channels 210 and 212. The channel separator 240 ensures the such liquid flows all the way through the endoscope 200 without leaking out of openings 204 and 206 and isolates channels 213 and 214 from each other so that each has its own independent flow path. One of skill in the art will appreciate that various endoscopes having differing arrangements of channels and openings will likely require modifications in the channel separator 240 to accommodate such differences while occluding ports in the head 202 and keeping channels separated from each other so that each channel can be flushed independently of the other channels. Otherwise a blockage in one channel might merely redirect flow to a connected unblocked channel.

A leakage port 254 on the end section 224 leads into an interior portion 256 of the endoscope 200 and is used to check for the physical integrity thereof, namely to ensure that no leakage has formed between any of the channels and the interior 256 or from the exterior to the interior 256.

The cleaning and sterilization cycle in detail comprises the following steps:

25 Step 1. Open the Lid

Pressing a foot pedal (not shown) opens the basin lid 16a. There is a separate foot pedal for each side. If pressure is removed from the foot pedal, the lid motion stops.

Step 2. Position and connect the endoscope

The insertion tube 208 of the endoscope 200 is inserted into the helical circulation tube 64. The end section 224 and head section 202 of the endoscope 200 are situated within the basin 14a, with the feed hose 222 coiled within the basin 14a with as wide a diameter as possible.

The flush lines 30, preferably color-coded, are attached one apiece to the endoscope openings 226, 228, 228a, 230 and 232. The air line 112 is also connected to the connector 254. A guide located on the station 10 provides a reference for the color-coded connections.

Step 3. Identify the user, endoscope, and specialist to the system

Depending on the customer-selectable configuration, the control system 20 may prompt for user code, patient ID, endoscope code, and/or specialist code. This information may be entered manually (through the touch screen) or automatically such as by using an attached barcode wand (not shown).

Step 4. Close the basin lid

Closing the lid 16a preferably requires the user to press a hardware button and a touch-screen 22 button simultaneously (not shown) to provide a fail-safe mechanism for preventing the user's hands from being caught or pinched by the closing basin lid 16a. If either the hardware button or software button is released while the lid 16a is in the process of closing, the motion stops.

Step 5. Start Program

The user presses a touch-screen 22 button to begin the washing / disinfection process.

Step 6. Pressurize the endoscope body and Measure the Leak Rate

The air pump is started and pressure within the endoscope body is monitored. When pressure reaches 250 mbar, the pump is stopped, and the pressure is allowed to stabilize for 6 seconds. If pressure has not reached 250 mbar in 45 seconds, the

64 53

program is stopped and the user is notified of the leak. If pressure drops to less than 100 mbar during the 6-second stabilization period, the program is stopped and the user is notified of the condition.

Once the pressure has stabilized, the pressure drop is monitored over the course of 60 seconds. If pressure drops more than 10 mbar within 60 seconds, the program is stopped and the user is notified of the condition. If the pressure drop is less than 10 mbar in 60 seconds, the system continues with the next step. A slight positive pressure is held within the endoscope body during the rest of the process to prevent fluids from leaking in.

Step 7. Check Connections

A second leak test checks the adequacy of connection to the various ports 226, 228, 228a, 230, 232 and the proper placement of the channel separator 240. A quantity of water is admitted to the basin 14a so as to submerge the distal end of the endoscope in the helical tube 64. Valve S1 is closed and valve S7 opened and the pumps 32 are run in reverse to draw a vacuum and to ultimately draw liquid into the endoscope channels 210 and 212. The pressure sensors 42 can be monitored to make sure that the pressure in any one channel does not drop by more than a predetermined amount in a given time frame. If it does, it likely indicates that one of the connections was not made correctly and air is leaking into the channel. In any event, in the presence of an unacceptable pressure drop the control system 20 will cancel the cycle and indicate a likely faulty connection, preferably with an indication of which channel failed. The volume of liquid which is drawn into the metering tube 136 in a given amount of time is measured and compared against a known standard for that particular endoscope model and channel. If the volume varies from the standard amount it indicates a failure. If the connection to the port 226 etc. is not tight, air will leak in and prevent sufficient volume entering the metering tube 136. Similarly, an obstruction within the endoscope channel will prevent sufficient volume entering the metering tube 136.

65 89 24

PRE-RINSE

The purpose of this step is to flush water through the channels to remove waste material prior to washing and disinfecting the endoscope 200

Step 8. Fill basin

- 5 The basin 14a is filled with filtered water and the water level is detected by the pressure sensor 59 below the basin 14a

Step 9. Pump water through channels

- 10 The water is pumped via the pumps 32 through the interior of the channels 213 214 217 218, 210 and 212 directly to the drain 74 This water is not recirculated around the exterior surfaces of the endoscope 200 during this stage.

Step 10. Drain

As the water is being pumped through the channels, the drain pump 72 is activated to ensure that the basin 14a is also emptied. The drain pump 72 will be turned off when the drain switch 76 detects that the drain process is complete.

- 15 **Step 11. Blow air through channels**

During the drain process sterile air is blown via the air pump 38 through all endoscope channels simultaneously to minimize potential carryover

WASH

Step 12. Fill basin

- 20 The basin 14a is filled with warm water (35 °C). Water temperature is controlled by controlling the mix of heated and unheated water The water level is detected by the pressure sensor 59

66 28

Step 13. Add detergent

The system adds enzymatic detergent to the water circulating in the system by means of the peristaltic metering pump 88. The volume is controlled by controlling the delivery time, pump speed, and inner diameter of the peristaltic pump tubing.

5 Step 14. Circulate wash solution

The detergent solution is actively pumped throughout the internal channels and over the surface of the endoscope 200 for a predetermined time period, typically of from one to five minutes, preferably about three minutes, by the channel pumps 32 and the external circulation pump 70. The inline heater 80 keeps the temperature at about 35 °C.

10

Step 15. Start block test

After the detergent solution has been circulating for a couple of minutes, the flow rate through the channels is measured. If the flow rate through any channel is less than a predetermined rate for that channel, the channel is identified as blocked, the program is stopped, and the user is notified of the condition. The peristaltic pumps 32 are run at their predetermined flow rates and cycle off in the presence of unacceptably high pressure readings at the associated pressure sensor 42. If a channel is blocked, the predetermined flow rate will trigger the pressure sensor 42, indicating the inability to adequately pass this flow rate. As the pumps 32 are peristaltic, their operating flow rate combined with the percentage of time they are cycled off due to pressure will provide the actual flow rate. The flow rate can also be estimated based upon the decay of the pressure from the time the pump 32 cycles off.

15

20

Step 16. Drain

The drain pump 72 is activated to remove the detergent solution from the basin 14a and the channels. The drain pump 72 turns off when the drain level sensor 76 indicates that drainage is complete.

25

67 31

Step 17. Blow air

During the drain process sterile air is blown through all endoscope channels simultaneously to minimize potential carryover

RINSE

5 Step 18. Fill basin

The basin 14a is filled with warm water (35 °C) Water temperature is controlled by controlling the mix of heated and unheated water The water level is detected by the pressure sensor 59

Step 19. Rinse

- 10** The rinse water is circulated within the endoscope channels (via the channel pumps 32) and over the exterior of the endoscope 200 (via the circulation pump 70 and the sprinkler arm 60) for 1 minute

Step 20. Continue Block test

- 15** As rinse water is pumped through the channels, the flow rate through the channels is measured and if it falls below the predetermined rate for any given channel the channel is identified as blocked, the program is stopped, and the user is notified of the condition

Step 21. Drain

- 20** The drain pump is activated to remove the rinse water from the basin and the channels.

Step 22. Blow air

During the drain process sterile air is blown through all endoscope channels simultaneously to minimize potential carryover

Step 23. Repeat rinse

Steps 18 through 22 are repeated to ensure maximum rinsing of enzymatic detergent solution from the surfaces of the endoscope and the basin

DISINFECT**5 Step 24. Fill basin**

The basin 14a is filled with very warm water (53 °C) Water temperature is controlled by controlling the mix of heated and unheated water The water level is detected by the pressure sensor 59 During the filling process the channel pumps 32 are off in order to ensure that the disinfectant in the basin is at the in-use concentration prior to circulating through the channels

Step 25. Add disinfectant

A measured volume of disinfectant 92 preferably CIDEX OPA orthophalaldehyde concentrate solution, available from Advanced Sterilization Products division Ethicon, Inc., Irvine CA is drawn from the disinfectant metering tube 96 and delivered into the water in the basin 14a via the metering pump 100 The disinfectant volume is controlled by the positioning of the fill sensor 98 relative to the bottom of the dispensing tube. The metering tube 96 is filled until the upper level switch detects liquid. Disinfectant 92 is drawn from the metering tube 96 until the level of the disinfectant in the metering tube is just below the tip of the dispensing tube After the necessary volume is dispensed, the metering tube 96 is refilled from the bottle of disinfectant 92 Disinfectant is not added until the basin is filled, so that in case of a water supply problem concentrated disinfectant is not left on the endoscope with no water to rinse it. While the disinfectant is being added, the channel pumps 32 are off in order to insure that the disinfectant in the basin is at the in-use concentration prior to circulating through the channels

Step 26. Disinfect

The in-use disinfectant solution is actively pumped throughout the internal channels and over the surface of the endoscope, ideally for a minimum of 5 minutes, by the

69 73
270

channel pumps and the external circulation pump. The temperature is controlled by the in-line heater 80 to about 52.5 °C

Step 27. Flow check

5 During the disinfection process flow through each endoscope channel is verified by timing the delivering a measured quantity of solution through the channel. Valve S1 is shut and valve S7 opened, and in turn each channel pump 32 delivers a predetermined volume to its associated channel from the metering tube 136. This volume and the time it takes to deliver provides a very accurate flow rate through the channel. Anomalies in the flow rate from what is expected for a channel of that
10 diameter and length are flagged by the control system 20 and the process stopped

Step 28. Continue Block Test

As disinfectant in-use solution is pumped through the channels, the flow rate through the channels is also measured as in Step 15

Step 29. Drain

15 The drain pump 72 is activated to remove the disinfectant solution from the basin and the channels

Step 30. Blow air

During the drain process sterile air is blown through all endoscope channels simultaneously to minimize potential carryover

20 **FINAL RINSE**

Step 31. Fill basin

The basin is filled with sterile warm water (45 °C) that has been passed through a 0.2 µ filter

Step 32. Rinse

The rinse water is circulated within the endoscope channels (via the channel pumps 32) and over the exterior of the endoscope (via the circulation pump 70 and the sprinkler arm 60) for 1 minute

5 Step 33. Continue Block test

As rinse water is pumped through the channels the flow rate through the channels is measured as in Step 15

Step 34. Drain

10 The drain pump 72 is activated to remove the rinse water from the basin and the channels

Step 35. Blow air

During the drain process sterile air is blown through all endoscope channels simultaneously to minimize potential carryover

Step 36. Repeat rinse

15 Steps 31 through 35 are repeated two more times (a total of 3 post-disinfection rinses) to ensure maximum reduction of disinfectant residuals from the endoscope 200 and surfaces of the reprocessor

FINAL LEAK TEST**Step 37. Pressurize the endoscope body and measure leak rate**

20 Repeat Step 6

Step 38. Indicate program completion

The successful completion of the program is indicated on the touch screen

Step 39. De-pressurize the endoscope

From the time of program completion to the time at which the lid is opened pressure within the endoscope body is normalized to atmospheric pressure by opening the vent valve S5 for 10 seconds every minute

Step 40. Identify the user

Depending on customer-selected configuration, the system will prevent the lid from being opened until a valid user identification code is entered.

Step 41. Store program information

Information about the completed program including the user ID, endoscope ID specialist ID, and patient ID are stored along with the sensor data obtained throughout the program.

Step 42. Print program record

If a printer is connected to the system, and if requested by the user a record of the disinfection program will be printed.

Step 43. Remove the endoscope

Once a valid user identification code has been entered the lid may be opened (using the foot pedal as in step 1 above) The endoscope is then disconnected from the flush lines 30 and removed from the basin 14a. The lid can then be closed using both the hardware and software buttons as described in step 4 above

The invention has been described with reference to the preferred embodiments. Obviously modifications and alterations will occur to others upon reading and understanding the preceding detailed description. It is intended that the invention be construed as including all such modifications and alterations insofar as they come within the scope of the appended claims or the equivalents thereof

NOVEDAD DE LA INVENCION

REIVINDICACIONES

5 1 En un procedimiento para limpieza y desinfección de un
endoscopio que tiene un canal un método para detectar la conexión
apropiada de un accesorio al canal y el flujo apropiado a través del canal el
endoscopio tiene el accesorio conectado a una primera abertura en el canal y
el canal tiene una segunda abertura. el método comprende los pasos de a)
10 colocar el endoscopio en la segunda abertura en un líquido b) aplicar presión
negativa a la primera abertura durante un período c) extraer líquido en el
canal desde la segunda abertura d) pasar el líquido fuera del canal a través
de la primera abertura, y e) medir la cantidad de líquido que pasa fuera de la
primera abertura y determinar con base en la cantidad si el accesorio se
15 conecta apropiadamente y el flujo apropiado pasa a través del canal

2 - El método de conformidad con la reivindicación 1
caracterizado además porque por lo menos una porción del canal contiene
aire antes del paso de aplicar presión negativa

3 El método de conformidad con la reivindicación 1
20 caracterizado además porque la bomba de volumen constante se utiliza para
aplicar presión negativa a la primera abertura.

4 - El método de conformidad con la reivindicación 1 caracterizado además porque los pasos b) a e) se repiten para uno o más canales adicionales

5 5 - El método de conformidad con la reivindicación 1 caracterizado además porque el paso de medir la cantidad de líquido que pasa fuera de la primera abertura comprende dirigir ese líquido en un dispositivo de medición.

6 - El método de conformidad con la reivindicación 1 caracterizado además porque la presión negativa se aplica durante una
10 longitud de tiempo determinada y la cantidad de líquido que pasa fuera de la primera abertura se compara con una cantidad determinada

7 - El método de conformidad con la reivindicación 1, caracterizado además porque la segunda abertura es un extremo distal de un endoscopio

WHAT IS CLAIMED IS

1 In a cleaning or disinfecting procedure of an endoscope having a channel a method of detecting proper connection of a fixture to the channel and proper
5 flow through the channel the endoscope having the fixture connected to a first opening into the channel and the channel having a second opening, the method comprising the steps of

a) placing the endoscope at the second opening into a liquid,
b) applying negative pressure at the first opening for a time period,
10 c) drawing liquid up into the channel from the second opening
d) passing the liquid out of the channel through the first opening, and
e) measuring the amount of liquid passed out of the first opening and
determining based upon the amount whether the fixture is connected properly and
proper flow is passing through the channel

15 2 A method according to claim 1 wherein at least a portion of the channel contains air prior to the step of applying negative pressure.

20 3 A method according to claim 1 wherein a constant volume pump is used to apply negative pressure at the first opening.

4 A method according to claim 1 wherein steps b) through e) are repeated for one or more additional channels

25 5 A method according to claim 1 wherein the step of measuring the amount of liquid passed out of the first opening comprises directing that liquid into a measuring device.

30 6 A method according to claim 1 wherein the negative pressure is applied for a predetermined length of time and the amount of liquid passed out of the first opening is compared to a predetermined amount

24
75

7 A method according to claim 1 wherein the second opening is at a distal end of an endoscope.

7600
3/8

ABSTRACT

5 A method detects proper connection of fixtures to a channel in an endoscope and proper flow through the channel during a cleaning or disinfection procedure. The endoscope has a first opening into one of its channels to which is connected a fixture and a second opening which is placed into a liquid. Negative pressure at the first opening draws an amount of liquid through the channel which is measured. If the channel is blocked insufficient liquid will flow and be measured. If the fixture is not connected properly air will leak in and insufficient liquid will flow and be measured.

778E

Please type in plus sign (+) inside this box ☐

PTO/SB/01 (10-03)
Approved for use through 10/31/2002. OAS CAS 1-0202
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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

DECLARATION AND POWER OF ATTORNEY FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63) ☒ Declaration Submitted with Initial Filing OR ☐ Declaration Submitted after Initial Filing (Surcharge (37 CFR 1.16(e)) required)	Attorney Docket Number	ASP-5028USNP	
	First Named Inventor	Richard Jackson	
	COMPLETE IF KNOWN		
	Application Number		
	Filing Date	March 31, 2005	
	Group Art Unit		
Examiner Name			

As a below named inventor, I hereby declare that:

My residence, mailing address, and citizenship are as stated below next to my name.
I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

AUTOMATED ENDOSCOPE REPROCESSOR CONNECTION INTEGRITY TESTING VIA LIQUID SUCTION
(Title of the Invention)

the specification of which

☒ is attached hereto

OR

☐ was filed on (MM/DD/YYYY) as United States Application Number or PCT International Application Number and was amended on (MM/DD/YYYY)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?	
				YES	NO
			☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐

☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/028 attached hereto:

BEST AVAILABLE COPY

78 88

DECLARATION Utility or Design Patent Application		
I hereby claim the benefit under 35 U.S.C. 119(e) of any United States provisional application(s) listed below.		
Application Number(s)	Filing Date (MM/DD/YYYY)	☐ Additional provisional application numbers are listed on a supplemental priority data sheet PTO/SB/025 attached hereto.
I hereby claim the benefit under Title 35, United States Code, § 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose material information as defined in Title 37 Code of Federal Regulations, § 1.58(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:		
Application Serial No.	Filing Date	Status
		Patented Patented Patented
I hereby appoint:		
☒ Practitioners at Customer Number 000027777 --		Place Customer Number Bar Code Label Here
AND		
☐ Practitioner(s) named below Name _____ Registration Number _____		
as my/our attorney(s) or agent(s) to prosecute the application identified above, and to transact all business in the United States Patent and Trademark Office connected therewith.		
Address all telephone calls to Andrew C. Farmer at telephone number (732) 524-2825.		
Direct all correspondence to: ☒ Customer Number 000027777 OR ☐ Correspondence address below		
Name:		
Address:		
Address:		
City:	State:	ZIP
Country	Telephone:	Fax:

BEST AVAILABLE COPY

79 83 30

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.			
NAME OF SOLE OR FIRST INVENTOR:		☐ A petition has been filed for this unsigned inventor	
Given Name (first and middle (if any)) Richard		Family Name or Surname Jackson	
Inventor's Signature		Date	
Residence: City Huntington Beach	State CA	Country USA	Citizenship Canadian
Mailing Address 3372 Spadler Drive			
City Huntington Beach	State CA	ZIP 92649	Country USA
I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.			
NAME OF SECOND INVENTOR:		☐ A petition has been filed for this unsigned inventor	
Given Name (first and middle (if any)) Harold R.		Family Name or Surname Williams	
Inventor's Signature		Date	
Residence: City San Clemente	State CA	Country USA	Citizenship USA
Mailing Address 1223 Lino Street			
City San Clemente	State CA	ZIP 92673	Country USA
I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.			
NAME OF THIRD INVENTOR:		☐ A petition has been filed for this unsigned inventor	
Given Name (first and middle (if any))		Family Name or Surname	
Inventor's Signature		Date	
Residence: City	State	Country	Citizenship
Mailing Address			
City	State	ZIP	Country

BEST AVAILABLE COPY

80-84

FIG. 1

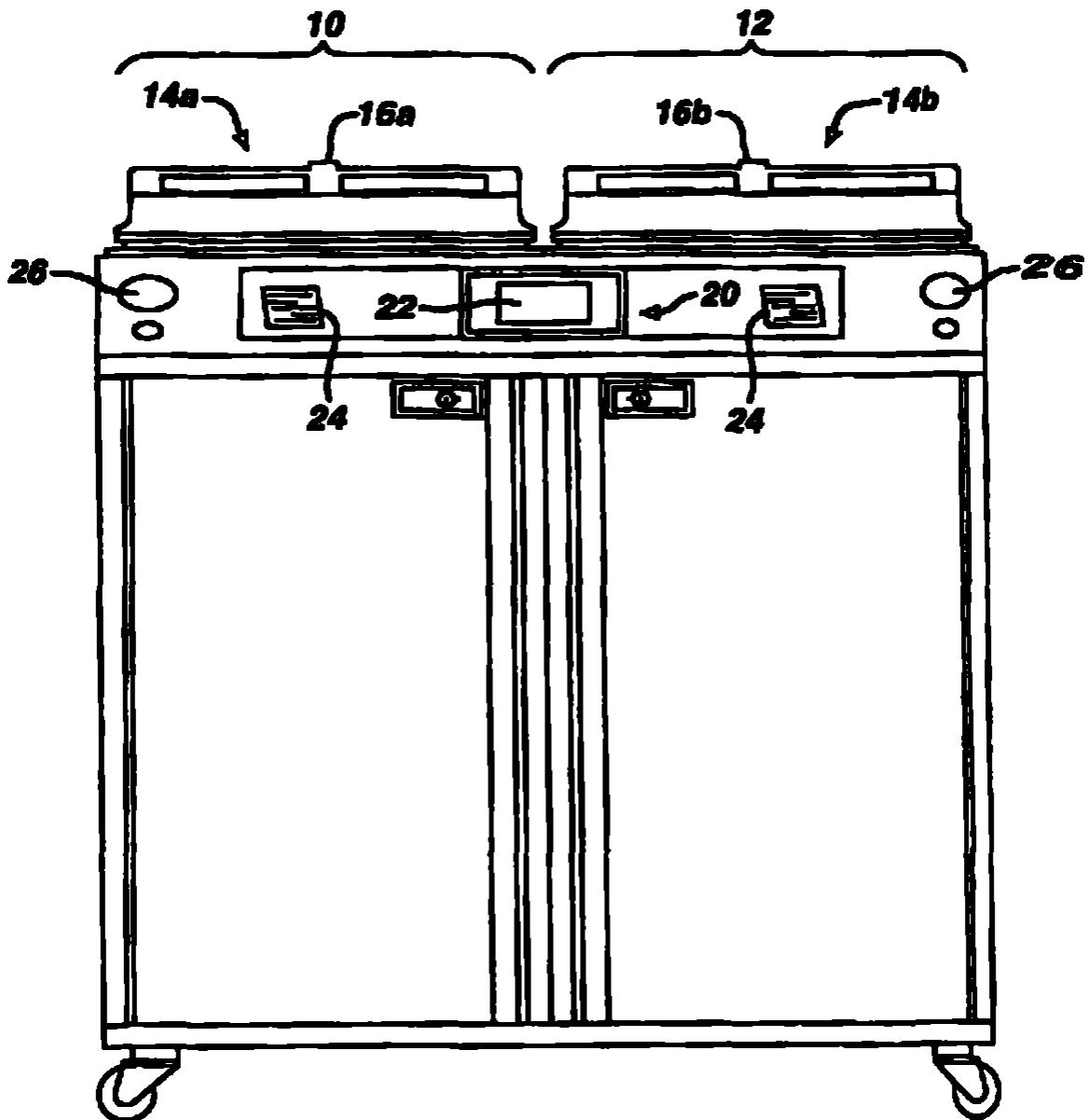


FIG. 2

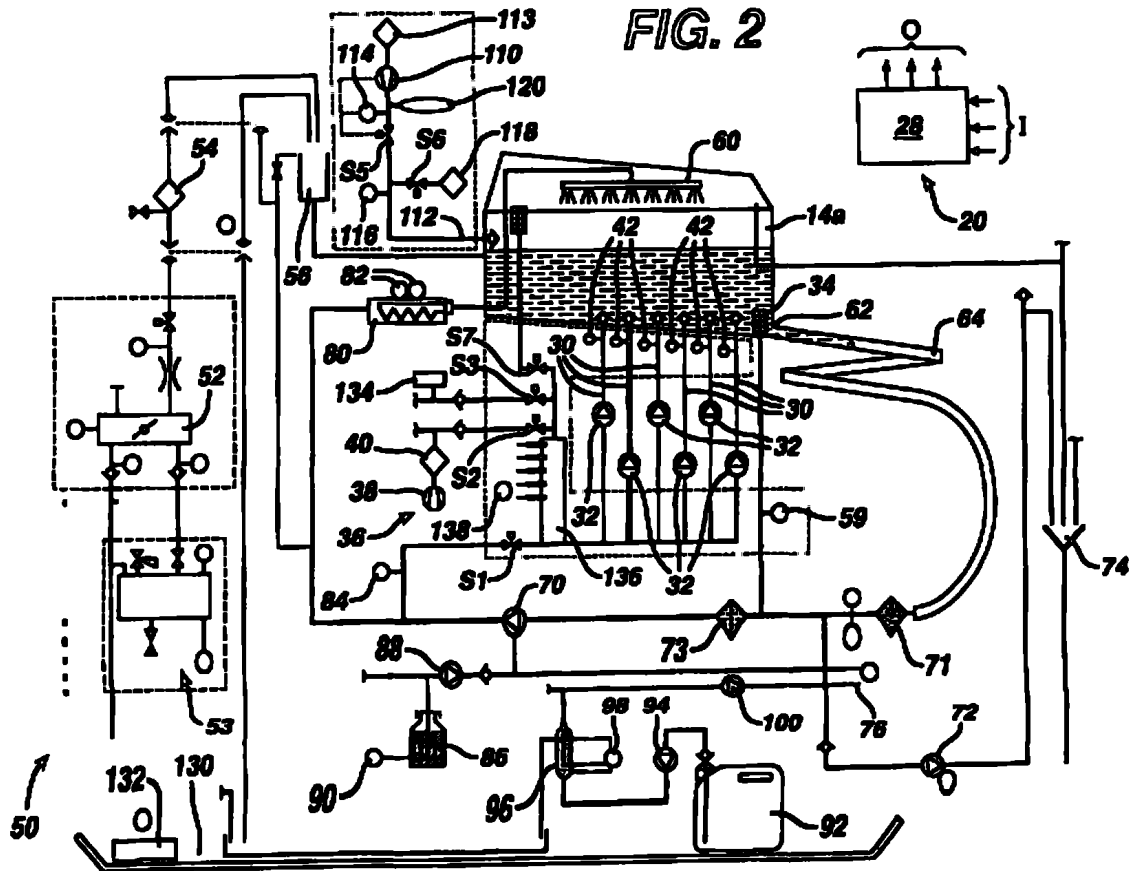
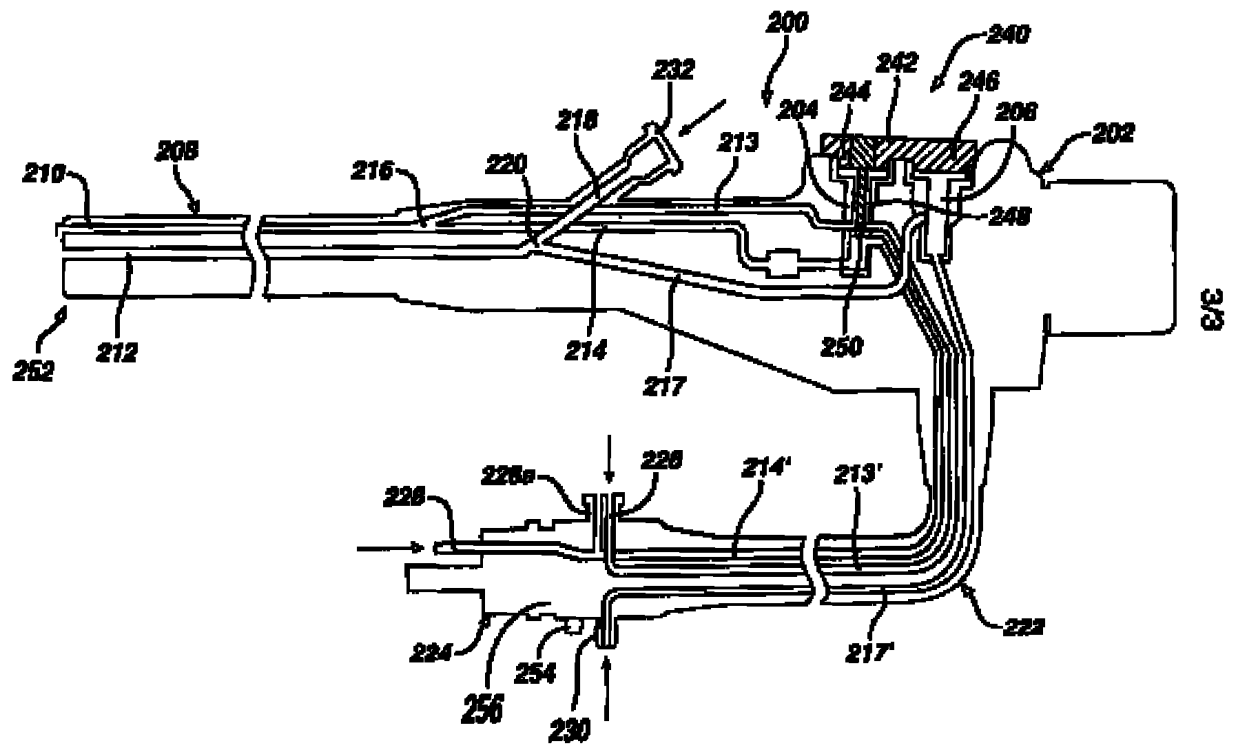


FIG. 3



4/90

83

REPUBLICA DE COLOMBIA
SUPERINTENDENCIA DE INDUSTRIA Y COMERCI

Folio 83

2020
Bogotá D C

Doctor(a)
ESCOBAR URIBE JIMENA
Apoderado(a) y/o Representante de
ETHICON INC

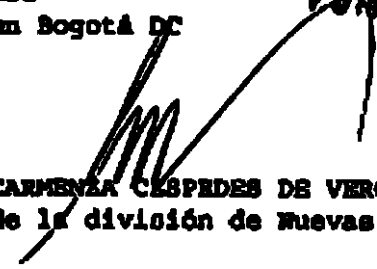
REFERENCIA	Radicación No	06 31933
	Trámite	2
	Evento	1
	Actuación	416
	Oficio No	3027
	Folios	1

Teniendo en cuenta que la solicitud de privilegio de patente que se tramita bajo el expediente indicado en la referencia reúne los requisitos de forma establecidos en los artículos 26 y 27 de la Decisión 486 de la Comisión de la Comunidad Andina, y en las demás disposiciones vigentes sobre la materia se envía el extracto de la solicitud a la Oficina de Comunicaciones para efecto de su publicación en la Gaceta de Propiedad Industrial conforme lo establece el artículo 40 de la misma Decisión

Siendo manifestación expresa del interesado de efectuar la publicación "inmediato", esta se realizará en la próxima gaceta de Propiedad Industrial

Cúmplase
Dado en Bogotá DC

15 Mayo 2007


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

adp410