

Nº 3 • Marzo 2018

Nuevas tecnologías en Cirugías

# LA PRINCESA INNOVA

## Boletín de Vigilancia Tecnológica



IP INSTITUTO DE INVESTIGACIÓN  
SANITARIA

SaludMadrid Hospital Universitario de La Princesa

*ítemas isciiii*

## Presentación

Queridos amigos:

Es para mí una satisfacción como Coordinadora de la Unidad de Innovación del Hospital Universitario de La Princesa, presentaros el tercer número del Boletín de Vigilancia Tecnológica dedicado a nuevas tecnologías quirúrgicas.

En los últimos años los quirófanos han cambiado mucho: hemos pasado de quirófanos en los que primaban dispositivos mecánicos básicos a los quirófanos del siglo XXI que están incorporando gran variedad de nuevas tecnologías (imagen, electrónica, robótica, TICs, etc). Sin duda las multinacionales tecnológicas han desempeñado un papel clave en este exponencial desarrollo en este campo, pero los profesionales sanitarios también somos sujetos importantes para desarrollar (o codesarrollar) nuevas tecnologías quirúrgicas, así como para monitorizar/evaluar nuevas tecnologías que pueden incorporarse mediante procedimientos de compra.



Dra. Carmen Suárez  
Coordinadora de la  
Unidad de Innovación

La actualización de la tecnología quirúrgica es una cuestión clave en los sistemas sanitarios modernos y cada día afronta nuevos desafíos (mejora de la seguridad, reducción de costes, aumento de eficacia, etc) que precisarán de soluciones innovadoras.

Todo estas cuestiones justifican que La Princesa Innova dedique este boletín a nuevas tecnologías quirúrgicas.

Este número se compone de dos bloques:

**La Princesa Innova** se compone de dos bloques bien diferenciados:

- 1 Una sección de **patentes subclasificadas por categorías tecnológicas**. Para acceder al contenido completo de la patente hay que clicar sobre el campo **“Numero de solicitud” de cada patente (+)** que enlazará con documento publicado en la base de datos [esp@cenet®](mailto:esp@cenet®)
- 2 Una sección sobre **información de mercado obtenida de GlobalData**.

### Publicación de la Unidad de Innovación del IIS del Hospital Universitario de La Princesa

Diego de León, 62  
28006 Madrid

#### Dirección:

Dra. Carmen Suárez Fernández  
Coordinadora de la Unidad de Innovación

#### Comunicación:

Elena Español Pueyo  
Responsable de la Unidad de Comunicación

#### Asesores científicos y clínicos:

Dra. Rosa María Moreno Carriles  
Jefe de Servicio de Angiología y Cirugía Vasculat

Dra. Pilar Rubio Bueno  
Facultativo especialista del Servicio de Cirugía Maxilofacial

Dr. Luis Sánchez-Urdazpal González  
Facultativo especialista del Servicio de Cirugía General y de Aparato Digestivo

Dr. Ramón Moreno Balsalobre  
Jefe de Servicio de Cirugía Torácica

#### Coordinación de contenidos:

Antonio Rodríguez Hita  
Técnico de la Unidad de Innovación

#### Diseño y coordinación editorial:

Ibáñez & Plaza Asociados, S.L.



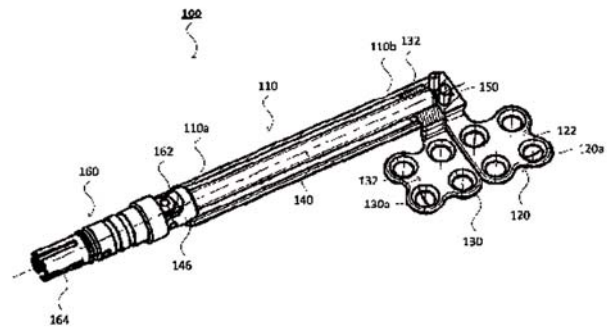
Este boletín se ha financiado gracias a la ayuda de PT13/0006/0016 concedida por ISCIII-Subdirección General de Evaluación y Fomento de la Investigación en el marco del PE de I+D+i 2013-2016 y cofinanciado con fondos FEDER.

## Patentes

### Categoría n. 1: DISTRACTORES MANDIBULARES

## Pediatric internal mandibular distractor

A pediatric mandibular distractor comprising a housing member elongating along a longitudinal axis, the housing member having at least one elongated slot elongating along at least a portion of the longitudinal axis and opening laterally through at least a side portion of the housing member; at least one fixed footplate attached to the housing member; a drive rod; and at least one moveable footplate engageable with the drive rod through the elongated slot by

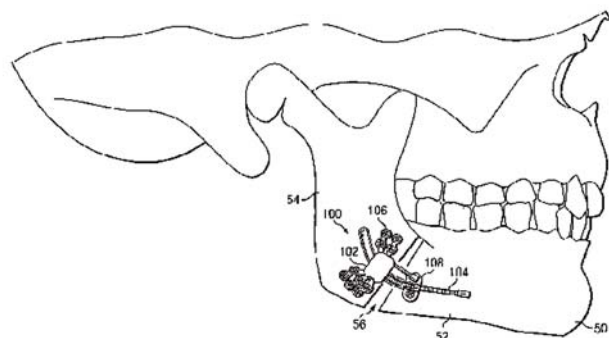


a connector. Wherein, when the fixed and moveable footplates are attached to the respective first and second bone surfaces, a bottom portion of the housing member is proximate to the first and second bone surfaces, and the side portion is further from the bone surfaces than the bottom portion in a direction transverse to the longitudinal axis. Methods of assembling and installing the exemplary pediatric mandibular distractor summarized above are also disclosed.

US2014148812 [+]

## Curve linear and straight mandibular distractor with occlusion correction feature

In accordance with one embodiment of the present invention, an osteodistraction device includes a flexible rod having a threaded portion. A distraction arm that includes a rod guide is coupled to the threaded portion of the flexible rod through a threaded hole near one end of the distraction arm. The rod guide of the distraction arm is operable to slide through a pivoting guide that is coupled to the distraction arm. An adjustment screw is coupled to the pivoting guide and is operable to rotate the distraction arm from a first to a second orientation. The flexible rod is operable to change the position of the rod guide relative to the pivoting guide.



US2007162045 [+]

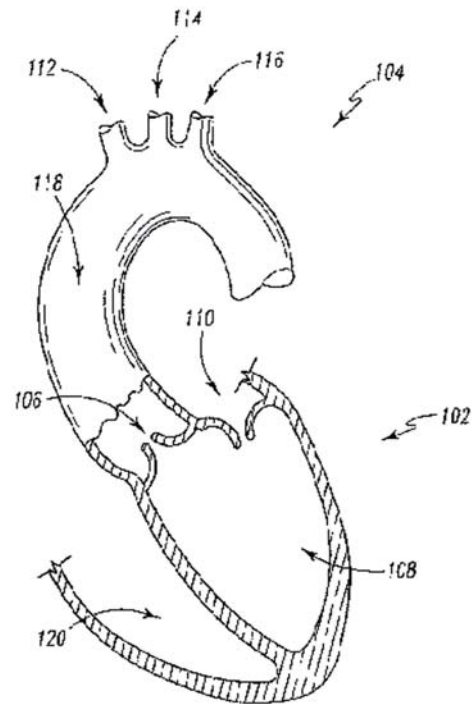
## Patentes

### Categoría n. 2: TRATAMIENTO ENDOVASCULAR DEL ANEURISMA AÓRTICO

#### Aortic valve stent graft

An implantable endoluminal prosthesis for replacing a damaged aortic valve is provided. In one embodiment, the prosthesis includes a balloon-expandable stent, a tubular conduit that extends into the ascending aorta, and a self-expanding stent. The tubular conduit extends across the balloon-expandable stent. The tubular conduit includes an artificial valve. The self-expanding stent extends across the tubular conduit into the ascending aorta. The balloon-expandable stent, the tubular conduit, and the self-expanding stent are coupled to provide unidirectional flow of fluid into the aorta and further into the coronary arteries. Also provided is a method for implanting the endoluminal prosthesis.

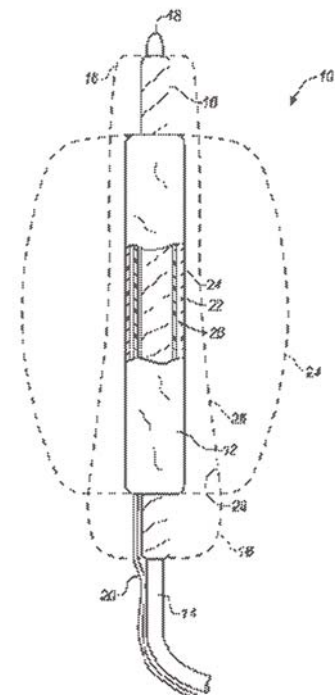
US2012046726 [+]



#### Method and system for treating aneurysms

Methods for treatment of aneurysms using a sequential manifold console to deploy multiple filling structures are provided herein. In one aspect, aneurysms are treated by simultaneously filling two double-walled filling structure using a sequential manifold console to guide a user in the steps to be followed in the procedure and to reliably achieve a consistent and durable aneurysmal treatment using a curable medium. The structures may be delivered over balloon deployment mechanisms in order to shape and open tubular lumens there-through. Pairs of filling structures delivered to the aneurysm from different access openings of a patient can be simultaneously prepared and pressurized from a single treatment console when treating abdominal aortic aneurysms using the described systems and methods.

US2017007263 [+]

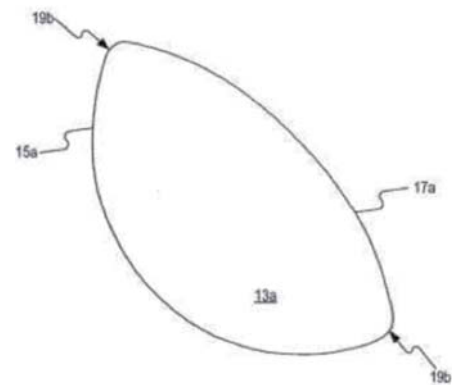


## Patentes

### Categoría n. 3: CIRUGIA TORACICA

## Method and system for treating aneurysms graft material for thoracic surgery

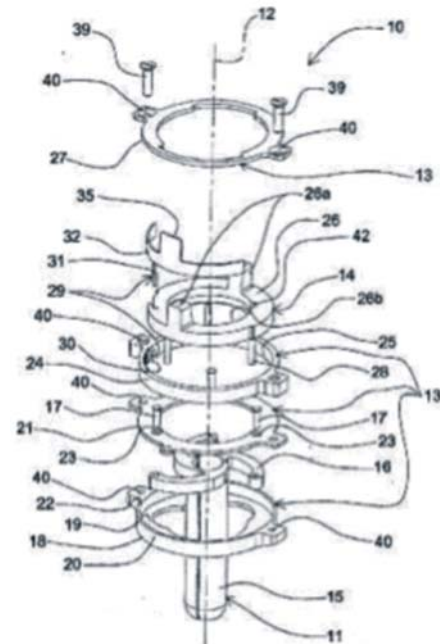
Problem to be solved: To provide a graft material, and a graft material for plastic surgery for the thoracic part or the like. Solution: A graft material and a medical device for thoracic surgery, and a method of manufacturing a trans-plantation device are described. The medical device including a sample 13b of a biocompatible material having first and second edges 15b and 17b is disclosed. The first edge 15b has a convex part that is curved in such a manner as to get away from the second edge, and the second edge includes a part that curved in such a manner as to get away from the first edge. The first and second edges are connected together via tips 19d-19e



JP2015037554 **[+]**

## Trocar for thoracic surgery

Trocar for thoracic surgery, comprising a guide duct (T) for surgical instruments adapted to be inserted in a body opening of access to the thoracic cavity. The duct (T) is formed by a plurality of sectors (11) arranged around its axis (12) and articulated to a support frame (13). Sector expansion means (14) are associated with the duct (T) for opening out the sectors from an initial insertion position in the body opening to a final maximum expansion position in which they are moved away from the axis (12) to a greater extent than in the configuration assumed in said initial position. The expansion means (14) comprise a control ring nut (26) movably connected with the sectors (11) and with the support frame (13) such that a rotation of the ring nut (26) in one direction, results in the sectors (11) away of the axis (12). Associated with the ring nut (26) are means for locking the rotation (29) in the direction opposite that of the expansion direction. The rotation locking means (29) comprise a device (32) for temporarily removing the rotation hindrance of the ring nut (26) in the direction opposite the expansion direction, whereby the sectors can move back-wards to the initial position.



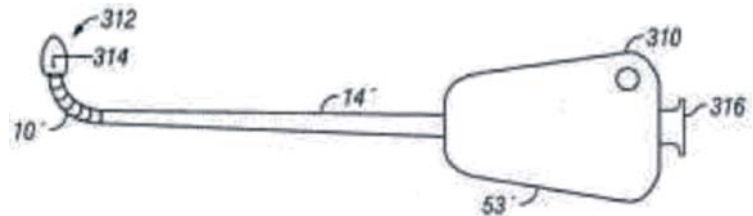
ITFI20070060 **[+]**

## Patentes

### Categoría n. 4: EQUIPOS DE CIRUGÍA ROBÓTICA

## Articulate and swappable endoscope for a surgical robot

The present invention is directed to an articulate minimally invasive surgical endoscope with a flexible wrist having at least one degree of freedom. When used with a surgical robot having a plurality of robot arms, the endoscope can be

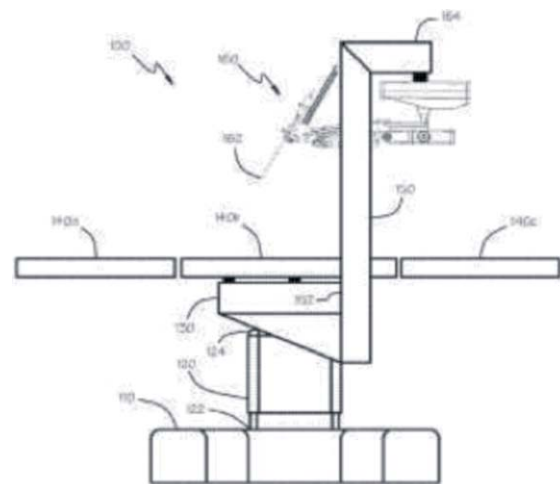


used with any of the plurality of arms thereby allowing the use a universal arm design. The endoscope in accordance to the present invention is made more intuitive to a user by attaching a reference frame used for controlling the at least one degree of freedom motion to the flexible wrist for wrist motion as-sociated with the at least one degree of freedom. The endoscope in accordance to the present invention attenuates undesirable motion at its back/proximal end by acquiring the image of the object in association with the at least one de-gree of freedom based on a reference frame rotating around a point of rotation located proximal to the flexible wrist.

**US2017311778** [\[+\]](#)

## Robotic surgical system with patient support

A robotic surgery system for supporting a patient and a robotic surgical ma-nipulator. The robotic surgery system includes a base, a pillar coupled to the base at a first end and extending vertically upwardly to an opposing second end, and an attachment structure coupled to the second end of the pillar. A patient table is coupled to the attachment structure. A robot support arm has a first end coupled to the attachment structure. The robot support arm extends vertically upwardly from the first end to a second end. The robot support arm may fur-ther extend horizontally over the patient table to support a robotic surgical ma-nipulator that will extend generally downward from the robot support arm to-ward a patient supported by the patient table to place an end effector of the robotic surgical manipulator adjacent a desired surgical site on the patient.



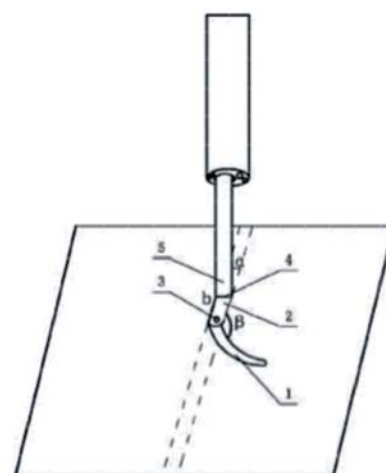
**US2015265356** [\[+\]](#)

## Patentes

### Categoría n. 5: CIRUGIA DEL APARATO DIGESTIVO

## Bicornuate joint sickle-shaped knife for minimally invasive surgery in digestive endoscopy

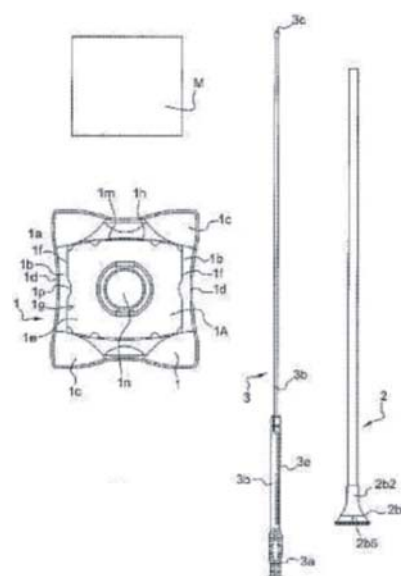
**Problem to be solved:** To provide a bicornuate joint sickle-shaped knife for minimally invasive surgery in a digestive endoscopy, the knife that facilitates operation safely. **Solution:** A knife head 1 is connected to one end of a turret 2 through a transverse joint 3. The other end of the turret is connected to the head end of a cutter body 5 through a longitudinal joint 4. An outer sleeve 6 is covered on the outside of the cutter body and is made to slide along the cutter body. The tail end of the cutter body is connected with one end of a handle 7. A slip lever 8 for adjusting a transverse joint 3 is provided on the handle. A guiding thread 15 has conductivity. One end of the guiding thread is connected to the knife head, sequentially passes through the turret, the cutter body, the handle and the slip lever, and the other end of the guiding thread is connected to a power supply interface. Equipment can achieve multi-angle motion of an endoscope cutting knife surface, and comprises a situation of the knife surface and mucosa tissue parallel cutting. Also, a knife surface angle is not affected by a lenticular restriction of the endoscope, and thereby the speed and quality of the endoscope operation are improved significantly and the secondary damage to the surrounding tissue is lowered to the utmost.



JP2016005253 [\[+\]](#)

## Device for placing a membrane, in particular for parietal, digestive, gynecological, thoracic and cardiovascular surgery

The invention relates to a device for placing a membrane, in particular for parietal, digestive, gynecological, thoracic and cardiovascular surgery, characterized in that it includes two components, a gripper (1) for laying, holding and conditioning the membrane, and an applicator including a device (2) for storing and transferring the membrane and a positioning means (3) for transferring the membrane from said gripper into the storing and transferring device in an umbrella configuration and then placing the membrane in situ in a deployed state in the body of the patient.



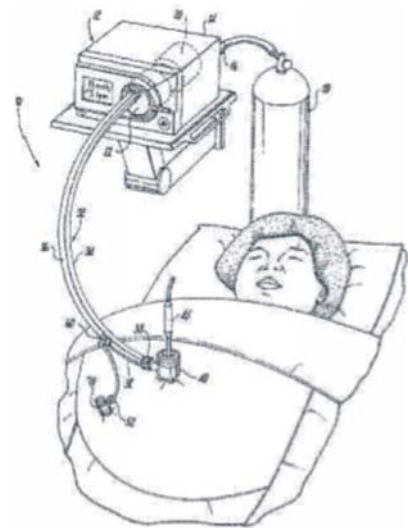
WO2010FR509 [\[+\]](#)

## Patentes

### Categoría n. 6: CIRUGÍA LAPAROSCÓPICA

## Branching multi-lumen tube set for laparoscopic surgical procedures involving smoke evacuation

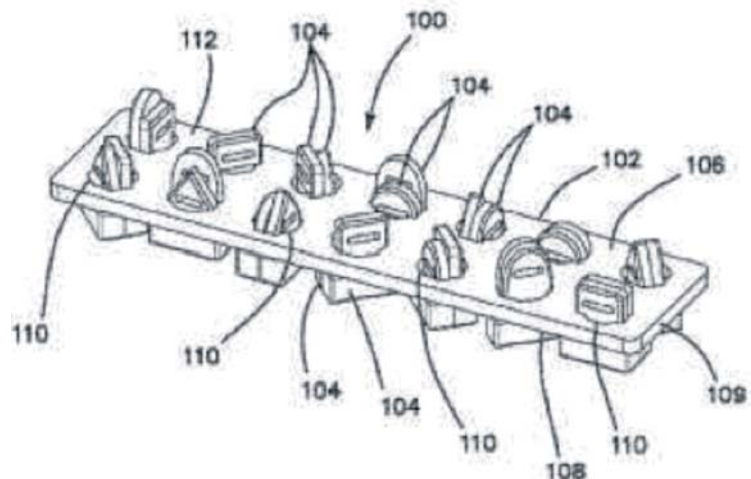
A multi-lumen tube set is disclosed for use during a laparoscopic surgical procedure performed within a patient's abdominal cavity, which includes at least a first lumen configured to extend between a first surgical access port accessing the patient's abdominal cavity and an external vacuum source, and a branching conduit communicating with the first lumen and configured for connection to a second surgical access port accessing the patient's abdominal cavity to facilitate smoke evacuation from the patient's abdominal cavity during a laparoscopic surgical procedure.



KR20177012751 **[+]**

## Surgical training model for laparoscopic procedures

A surgical training device including a model for practicing the passage of needle and suture. The model includes a base with a plurality of openings configured to receive a plurality of suture tabs. The suture tabs are made of elastomeric material. Some suture tabs includes pre-formed tab apertures for the passage of a suture. Other suture tabs include a penetrable area through which a suture needle may penetrate for passing a suture. The suture tabs are movable with respect to the base to orientate them at different angles with respect to the base. The base itself may include portions that are angled with respect to each other. The suture tabs are movable with respect to the base to pull, expose or open the tab apertures and surfaces. Some of the tab apertures are slits that open upon being pulled relative to the base requiring the user to practice hold-ing the tab while passing the needle through the tab.



CA20162987240 **[+]**

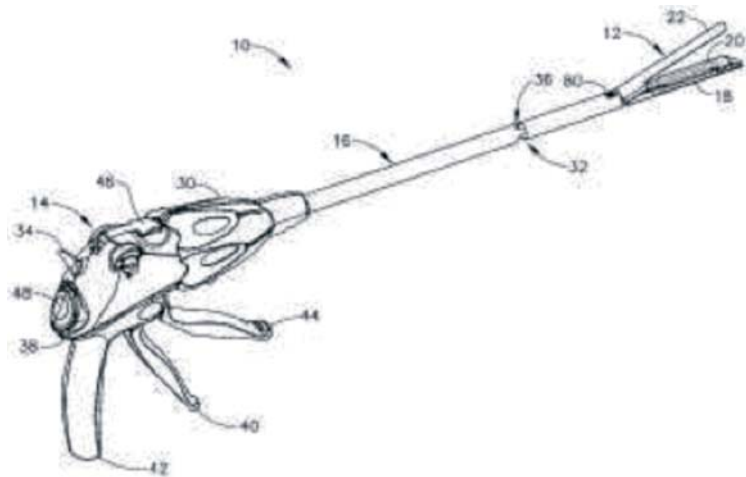


## Patentes

### Categoría n. 7: SUTURA MECANICA

## Articulating surgical stapling instrument incorporating a two-piece e-beam firing mechanism

A surgical severing and stapling instrument, suitable for laparoscopic and en-doscopic clinical procedures, clamps tissue within an end effector of an elongate channel pivotally opposed by an anvil. An E-beam firing bar moves distally through the clamped end effector to sever tissue and to drive staples on each side of the cut. The E-beam firing bar affirmatively spaces the anvil from the elongate channel to assure properly formed closed staples,

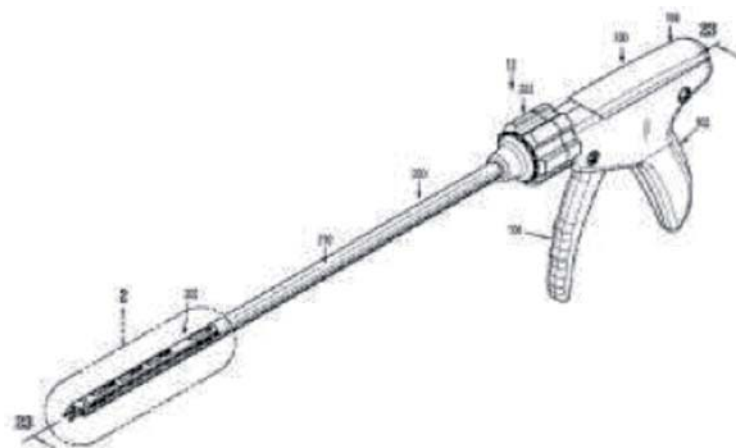


especially when an amount of tissue is clamped that is inadequate to space the end effector. In particular, an upper pin of the firing bar longitudinally moves through an anvil slot and a channel slot is captured between a lower cap and a middle pin of the firing bar to assure a minimum spacing. Forming the E-beam from a thickened distal portion and a thinned proximal strip enhances manufacturability and facilitates use in such articulating surgical instruments.

US2018028184 [+]

## Endoscopic reusable surgical clip applier

A reusable surgical clip applier (10) is provided and includes a handle assembly (100), an endoscopic assembly (200) selectively connectable to a housing (102) of the handle assembly (100), and a cartridge assembly (300) selectively loadable in and connectable to the endoscopic assembly (200).



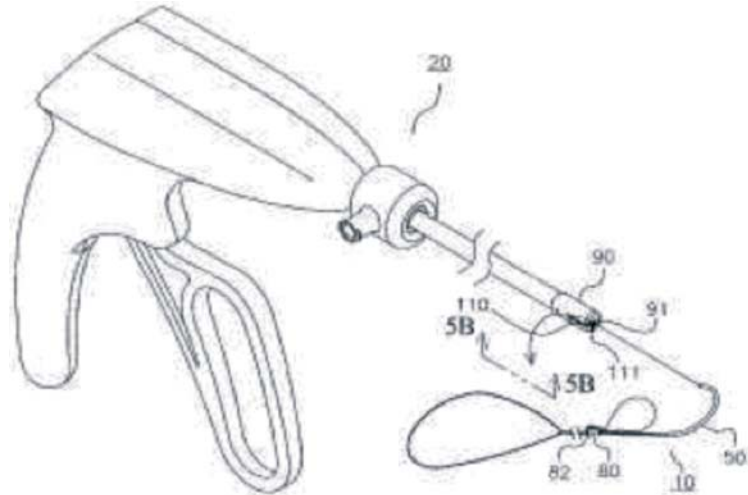
US2018008276 [+]

## Patentes

### Bidirectional suture loops using coaxial mechanical fasteners

Systems and methods are provided for delivering neurostimulation therapies to patients. The patient's intrinsic heart rate recovery may be used to determine efficacy of therapy and to adjust stimulation parameters.

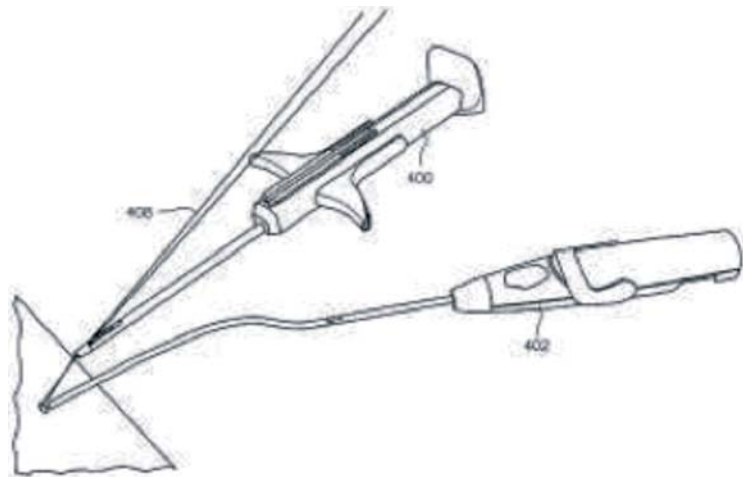
**WO2014143161** [\[+\]](#)



### Suturing, crimping and cutting device

A percutaneous surgical device is provided, which comprises a combination wound suturing and crimping and cutting device. In one exemplary embodiment a crimping and cutting device portion nests within a suturing device portion. The combined device may locate a vessel wound and pass suture through the vessel walls surrounding the wound. Then, the crimping and cutting portion may detach, the suturing portion may be removed, and the crimping and cutting portion may be located to the wound site to apply a fastener (e.g., a ferrule).

**US2008249545** [\[+\]](#)



## Información de mercado

La siguientes gráficas se han generado mediante la licencia a la base de datos GlobalData.

