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(54) **DIRECT VISION PORT SITE DISSECTOR**

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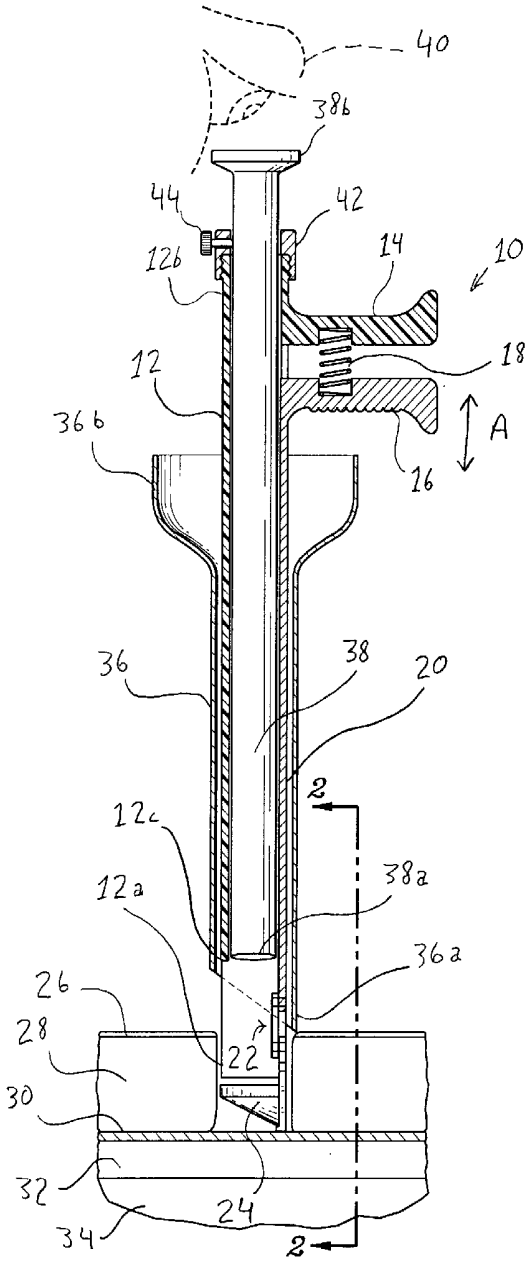
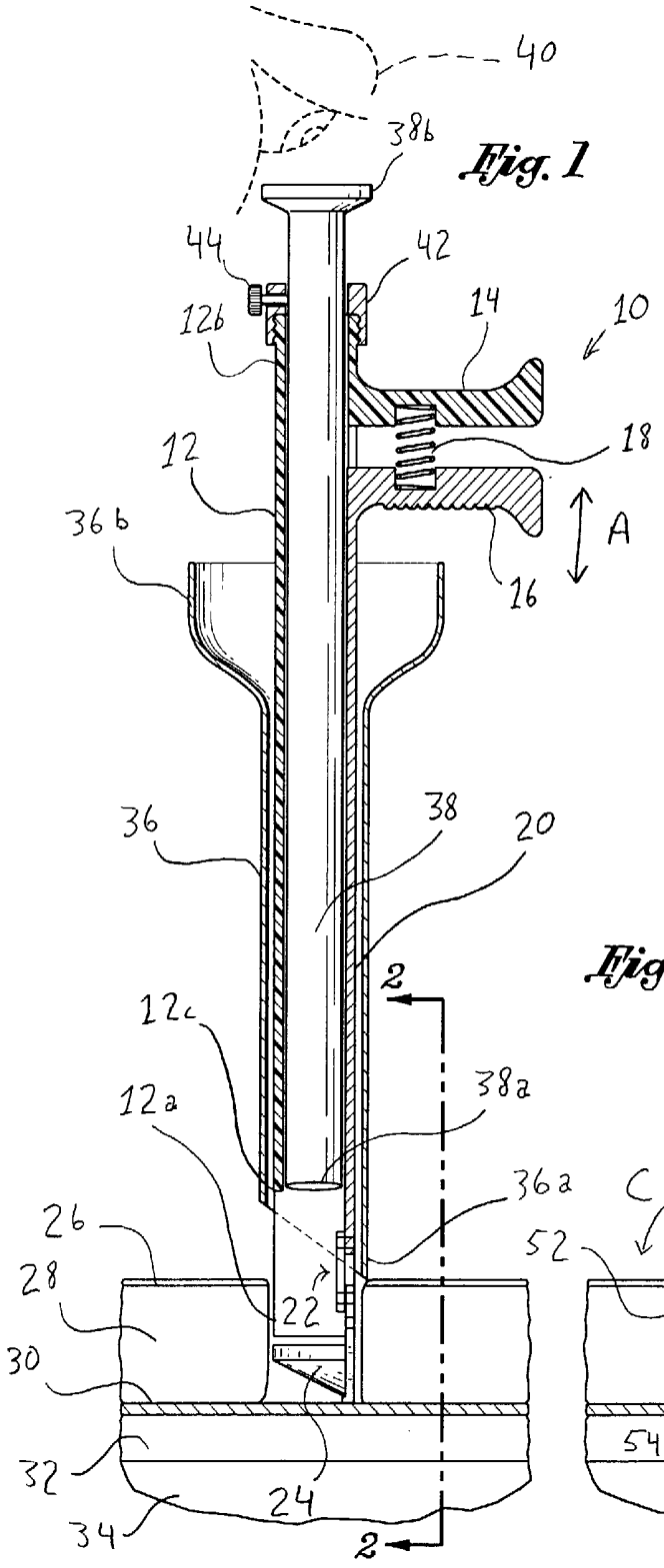
(57) **ABSTRACT**

A direct vision port dissector for providing safe entry into a body cavity and placement of a standard laparoscopic port for use in laparoscopic surgery. The device comprises an elongate tubular housing within which a laparoscope is placed. Formed at the distal-most opening of the tubular housing is a dissector mechanism that may be selectively deployed and operative to spread tissue in a layer-by-layer fashion while under the direct vision of the laparoscope.




40
38b
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42
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Fig. 1

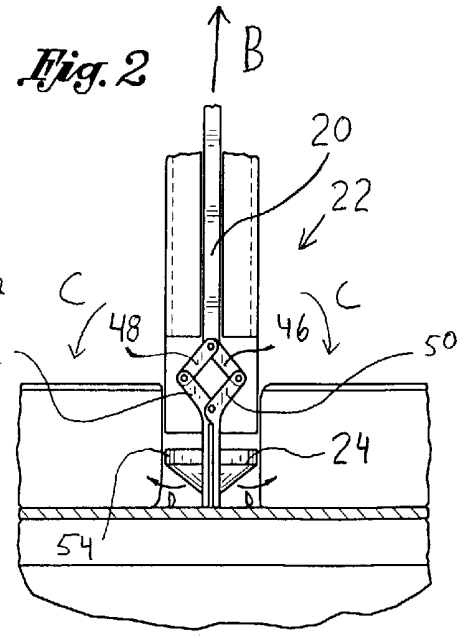
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Fig. 2

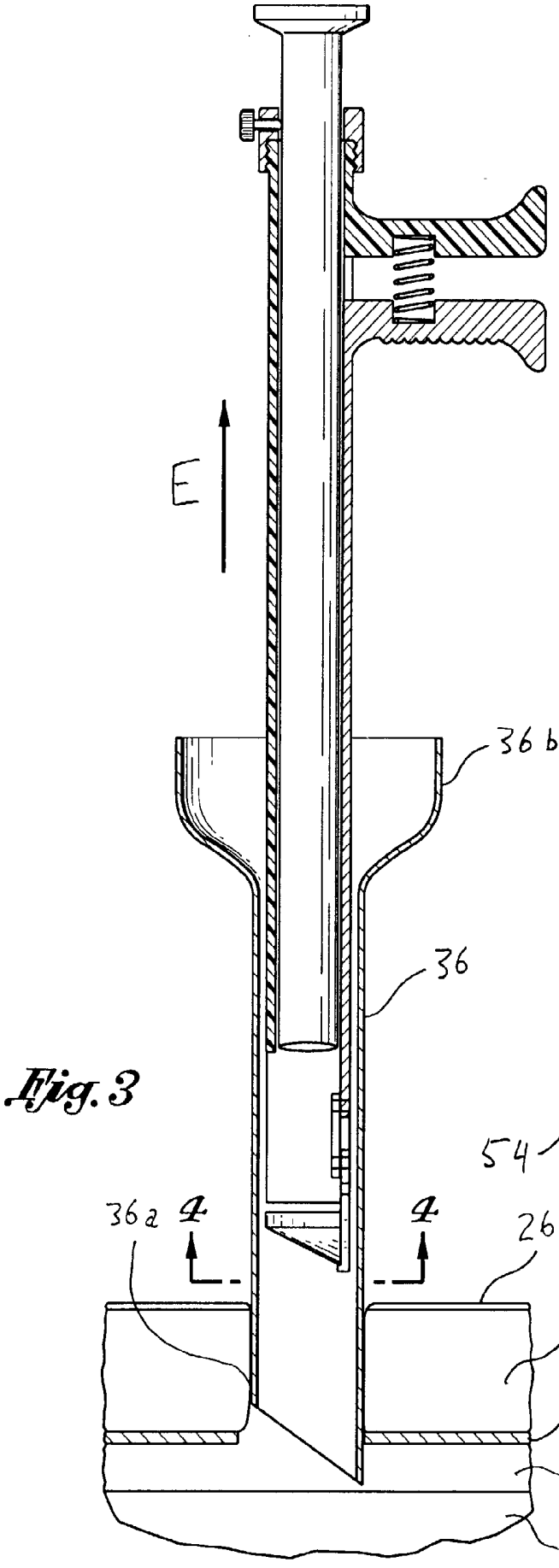


Fig. 3

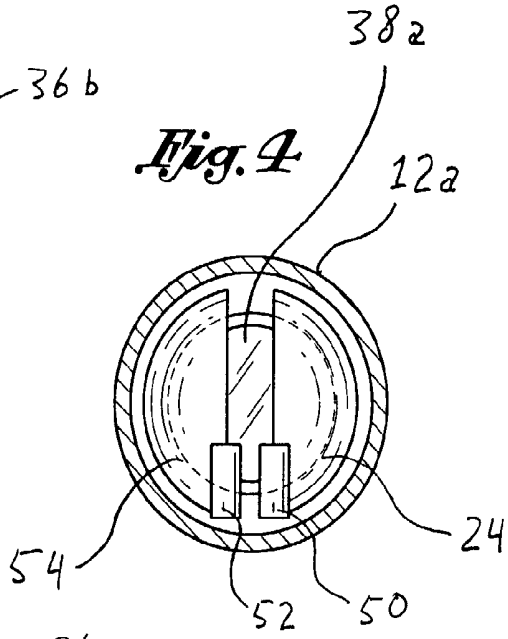


Fig. 4

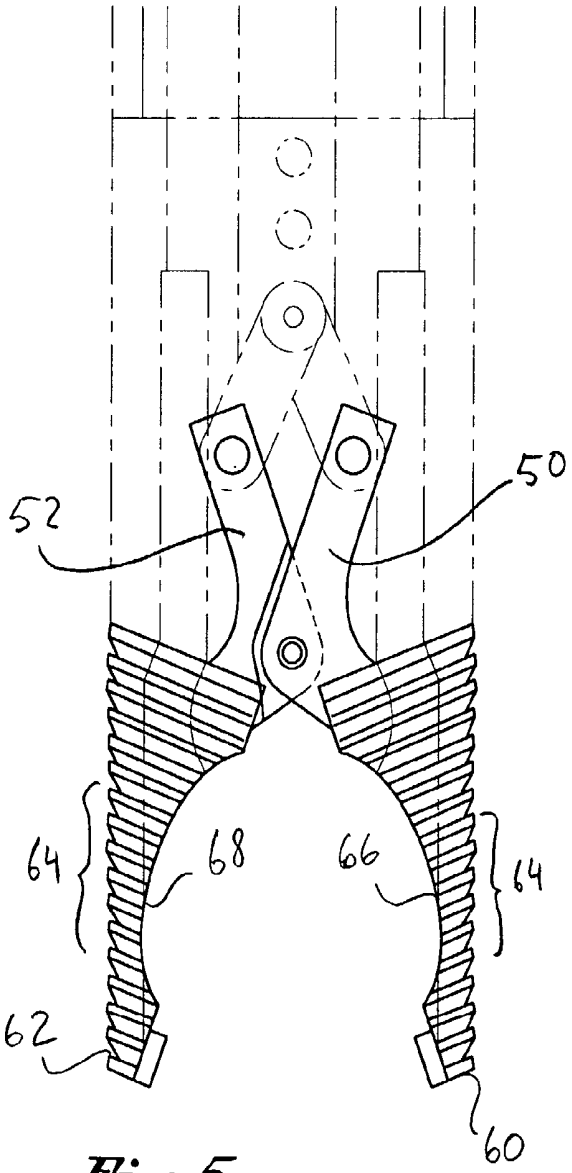


Fig. 5

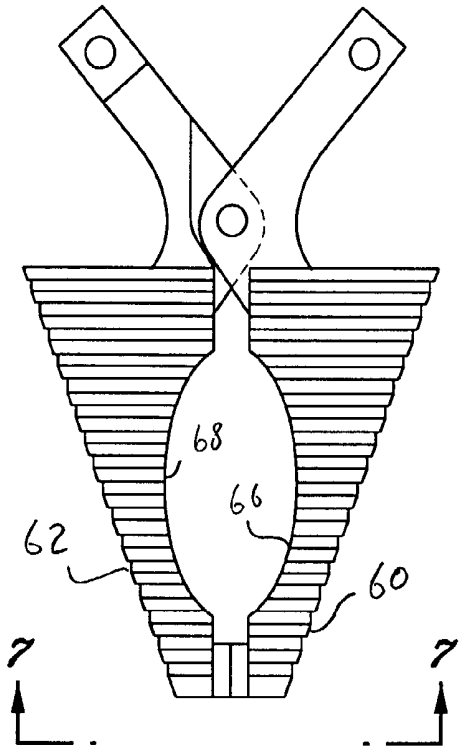


Fig. 6

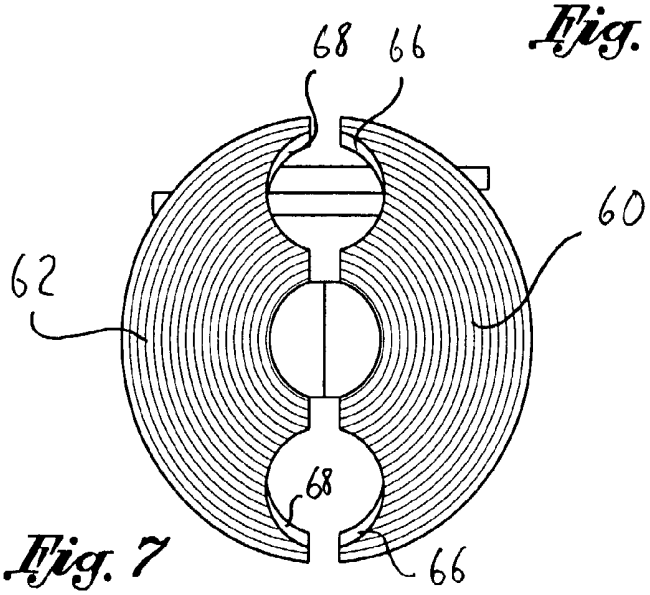


Fig. 7

# DIRECT VISION PORT SITE DISSECTOR

## CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] (Not Applicable)

## STATEMENT RE: FEDERALLY SPONSORED RESEARCH/DEVELOPMENT

[0002] (Not Applicable)

## BACKGROUND OF THE INVENTION

[0003] Laparoscopic surgery is a well-known, widely utilized surgical technique that advantageously reduces patient recovery time due to its minimal tissue damage. Generally, laparoscopic surgery relies upon the formation of one or more puncture wounds through which a body cavity, typically the peritoneal cavity, can be accessed. In this regard, once the peritoneal cavity has been entered, the same is insufflated with carbon dioxide gas, typically to a pressure of approximately 15 mm Hg, followed by the introduction of a laparoscopic port with trocar, which may either be bladed or blunt.

[0004] The laparoscopic port is put into the peritoneal cavity followed by the placement of a laparoscope therethrough to thus provide visualization of the cavity thus enabling the surgeon to view the surrounding organs and conduct the surgical procedure. Advantageously, the use of laparoscopic ports through small diameter openings enables the patient to readily heal following surgery, and requires much less recuperation time for the patient as compared to open surgical procedures, which typically deploy long incisions which can and frequently are deemed traumatic to the patient and involve substantially longer recuperative periods.

[0005] Despite its advantages, laparoscopic surgery as currently performed can pose substantial risks to the patient. In this respect, it is widely recognized that entry into the peritoneal cavity during laparoscopic surgery, due to the procedure by which the peritoneal cavity is accessed, can cause serious injury to the abdominal organs, such as the spleen, liver and intestine as well as surrounding blood vessels. This risk is due in large part to the fact that in the unoperated abdomen, most surgeons enter the peritoneal cavity using a Veress needle which is pushed blindly through the patient's fascia and peritoneum. The peritoneal cavity is then insufflated followed by the introduction of the laparoscopic port with trocar, which also is pushed blindly into the peritoneal cavity. Once positioned therein, a laparoscope is introduced through the port to thus provide visualization within the cavity.

[0006] Problematic with such procedure, however, is the fact that the abdomen is entered blindly on two separate occasions, first through the introduction of the Veress needle and second through the laparoscopic port, which can and on occasion does injure abdominal organs and surrounding blood vessels.

[0007] To the extent laparoscopic surgery is performed upon a patient that has previously undergone an abdominal operation, the preferred surgical practice is to enter the peritoneal cavity under direct vision. In this regard, it is known that when a patient has undergone previous abdominal surgery, the abdominal contents can become adherent to the abdominal wall, making blind placement of a Veress needle or trocar too risky of a technique.

[0008] According to such technique, the skin is incised and the subcutaneous tissue dissected until the fascia is encountered. The fascia is then dissected, typically by grasping the fascia with two surgical clamps and incising the fascia sharply followed by successively grasping the subfascial tissue until the peritoneal cavity is entered. Once entered, the laparoscopic port is then placed in the peritoneal cavity under direct vision and the abdomen insufflated with carbon dioxide gas.

[0009] Such alternative procedure, however, typically requires a larger skin incision than is typically produced via the use of the Veress needle technique, particularly with respect to obese patients, and is further more prone to gas leakage during surgery, thus requiring constant monitoring and maintenance of adequate insufflation.

[0010] In light of such potential complications that can arise via entry into the peritoneal cavity during laparoscopic surgery, attempts have been made to provide means for safely entering into a body cavity utilizing direct visualization. Exemplary of such devices as those disclosed in U.S. Pat. No. 5,441,041, issued to Sauer, et al., entitled Optical Trocar, issued Aug. 15, 1995, which utilizes a blade moveable between a non-deployed position and a deployed position to thus allow dissection under visualization of an endoscope. Such device, however, does not allow for any type of spreading of the cut tissue to enable the surgeon to see the next layer of tissue to be entered. As such, dissection is performed without prior visualization thereof.

[0011] A similar device attempting to provide direct visualization during entry into a body cavity is shown in U.S. Pat. No. 5,569,291, issued to Privitera, et al., entitled Surgical Penetration and Dissection Instrument, issued on Oct. 29, 1996. Such reference discloses a device for forming an entry into a body cavity performed under direct visualization of an endoscope. The dissecting portion of the device consists of a clear plastic conical tip with elevated dissecting blades that is advanced into the tissue via a twisting motion.

[0012] The conical tip, however, is advanced bluntly into the tissue before the same can be identified and, as a consequence, incision of the tissue is performed without prior visualization. In fact, inadvertent entry into an organ cannot be avoided via use of such device, and it is only after the organ is entered (and hence damaged) that such matter can be appraised. Moreover, the use of clear plastic has substandard optical visualization due to optical properties inherent in such material, coupled with the conical shape, such that advancement of the tip fails to provide a clear visualization as the same is advanced through tissue.

[0013] Other devices that are similar in nature include U.S. Pat. No. 5,720,761, issued to Kalli on Feb. 24, 1998 entitled Visually Directed Trocar and Method; U.S. Pat. No. 5,551,947, issued to Kalli on Sep. 3, 1996, entitled Visually Directed Trocar for Laparoscopic Surgical Procedures and Methods of Using the Same; U.S. Pat. No. 5,609,562, issued to Kalli on Mar. 11, 1997 entitled Visually Directed Trocar and Method; and U.S. Pat. No. 5,385,572, issued to Nobles, et al. on Jan. 31, 1995 entitled Trocar for Endoscopic Surgery, the teachings of all of which are expressly incorporated herein by reference.

[0014] There is thus a substantial need in the art for a system and method that can enable a surgeon to safely enter a body cavity, and in particular the peritoneal cavity, for purposes of performing laparoscopic surgery whereby the surgeon is provided with direct visualization during entry into the cavity such that tissue separation can be visualized and organ and tissue damage can be avoided (i.e., the surgeon can see the tissue prior to dissecting the same). There is additionally need for such a device and system that is capable of forming an entry into a body cavity via a skin incision no greater than that required to admit the introduction of the laparoscopic port and that also preferably forms a tight seal around the port following its introduction such that gas leakage during the laparoscopic surgical procedure is minimized. Still further, there is need for such a system and method which provide for cavity entry without prior insufflation of gas into the cavity but can preferably have a means to insufflate the body cavity following entry, if desired.

## BRIEF SUMMARY OF THE INVENTION

[0015] The present invention specifically addresses and alleviates the above-identified deficiencies. In this regard, the present invention is directed to a direct vision port dissector operative to selectively and sequentially dissect through subcutaneous tissue, fascia, pre-peritoneal fat and peritoneum under direct vision of a laparoscope to allow for placement of a laparoscopic port. According to a preferred embodiment, the dissector consists of a long tubular housing having a proximal end and a distal end, the latter being operative to be inserted through a skin incision made upon the patient. Disposed within the distal end is a dissector mechanism having a dissector tip, which is operative to extend from the distal-most opening of the tubular housing and selectively spread apart the various layers of tissue encountered as the distal-most end of the device is advanced through the successive tissue layers and into the peritoneal cavity.

[0016] The dissector mechanism is operatively coupled to a handle mechanism extending from the proximal end of the tubular housing which enables the dissecting mechanism to be selectively controlled, as may be necessary for any anatomical considerations that are visually perceived by the physician. With respect to such handle mechanism, the same preferably takes the form of an actuator bar coupled to a handle member, the latter being operatively coupled to the dissecting mechanism and operative to cause the same to transition between a neutral position, wherein the same is maintained in a coaxial configuration relative said distal end of said housing, and an extended configuration wherein the dissecting mechanism is operative to spread apart at the distal end of the housing and thus spread apart tissue to opposed sides of the distal end of the housing.

[0017] According to a preferred embodiment, the dissector tip comprises a pair of arcuate blade members that cooperatively define a generally conical shape. The blades are preferably operative to extend from the distal-most opening of the housing and extend in diametrically opposed directions to thus produce a spreading motion that extends beyond the opening of the distal end of the tubular housing and thus enables a conventional laparoscope positioned within the housing to provide the physician with direct vision as each layer of tissue is sequentially spread apart from the advancing distal end of the device. To enhance the ability of the laparoscope to view past the dissector tip, the dissector tip may preferably include arcuate voids that define apertures through which the laparoscope can view into the patient when such arcuate blade members assume the general conical shape.

[0018] To the extent the distal end of the device comes within close proximity to an organ or other anatomical structure sought to be avoided, the surgeon may take appropriate measures to avoid the same. Otherwise, the physician merely advances the distal end of the device, via the sequential spreading of tissue provided by the dissecting mechanism, until such time as the peritoneal cavity is entered.

[0019] Once entered, a conventional laparoscopic port is slid down the shaft of the tubular housing and through the newly dissected incision into the peritoneal cavity, which advantageously can be viewed under direct vision. To enable the device to be utilized with conventional laparoscopic devices and conventional laparoscopic procedure, the same will preferably be made to fit either a ten millimeter port/laparoscope or five millimeter port/laparoscope.

[0020] Thereafter, as per conventional laparoscopic procedures, the peritoneal cavity may be insufflated with carbon dioxide gas which may be channeled through the laparoscopic port. In an alternative embodiment of the housing of the present invention, the tubular housing may include a dedicated carbon dioxide channel to thus enable insufflation of the peritoneal cavity to be achieved directly with the dissecting device and prior to the sliding of any laparoscopic port into the peritoneal cavity.

[0021] It is therefore an object of the present invention to provide a direct vision port dissector which enables a physician to gain entry into a body cavity, and in particular the peritoneal cavity under direct vision, and thus eliminates the need to blindly enter the same.

[0022] Another object of the present invention is to provide a direct vision port dissector that enables a physician to directly view entry to the peritoneal cavity via a dissection procedure and means of controlling such entry whereby inadvertent dissection of an organ, blood vessel or tissue mass can be avoided or substantially minimized.

[0023] Another object of the present invention is to provide a direct vision port dissector which enables a physician to safely gain entry into the peritoneal cavity under direct vision irrespective as to whether or not the patient has or has not undergone previous abdominal surgery.

[0024] Another object of the present invention is to provide a direct vision port dissector that can enable a laparoscopic port to be placed into position in a manner that substantially minimizes any possibility of leakage of carbon dioxide once the same in administered to innsufflate the body cavity.

[0025] Still further objects of the present invention are to provide a direct vision port dissector that, in addition to substantially minimizing the risk of internal organ injury, is of simple construction, easy to use, relatively inexpensive to manufacture, and can be readily deployed utilizing conventional laparoscopic surgical devices and related techniques. The device should also have a means to secure the laparo-

scope into the device to maintain constant visual orientation and prevent the scope from slipping out of the device during dissection.

## BRIEF DESCRIPTION OF THE DRAWINGS

[0026] These as well as other features of the present invention will become more apparent upon reference to the drawings wherein:

[0027] **FIG. 1** is a cross-sectional view of a direct vision port dissector constructed in accordance with the preferred embodiment of the present invention as utilized to gain entry into the peritoneal cavity of a patient, the port dissector further having included therein a laparoscope to enable entry into the peritoneal cavity to be viewed by a physician.

[0028] **FIG. 2** is a perspective view taken along line **2-2** of **FIG. 1**.

[0029] **FIG. 3** is a cross-sectional view of a laparoscopic port being positioned within the peritoneal cavity of a patient via the direct vision port dissector of the present invention, the latter being withdrawn therefrom.

[0030] **FIG. 4** is a frontal view of the dissector tip of the direct vision port dissector of the present invention, shown in a first neutral position.

[0031] **FIG. 5** is a side-view of a dissector tip of the direct vision port dissector of the present invention, constructed in accordance with a preferred embodiment, shown in a second operative position.

[0032] **FIG. 6** is a top view of the dissector tip of **FIG. 5** shown in a first neutral position.

[0033] **FIG. 7** is a frontal view taken along line **7-7** of **FIG. 6**.

## DETAILED DESCRIPTION OF THE INVENTION

[0034] The detailed description set forth below is intended as a description of the presently preferred embodiment of the invention, and is not intended to represent the only form in which the present invention may be constructed or utilized. The description sets forth the functions and sequences of steps for constructing and operating the invention. It is to be understood however, that the same or equivalent functions and sequences may be accomplished by different embodiments and that they are also intended to be encompassed within the scope of the invention.

[0035] Referring now to the drawings, and initially to **FIG. 1**, there is shown a cross sectional view of a laparoscopic port site dissector **10** constructed in accordance with a preferred embodiment of the present invention. As illustrated, the device **10** includes an elongate tubular housing **12** having a distal end **12***a* operative to be inserted within an incision formed upon the skin **26** of a patient and a proximal end **12***b* for use in coupling with a laparoscope **38** and providing means for manually manipulating the device **10**. With respect to the latter, a first handle member **14** is preferably formed upon the distal end **12***b* of the housing **12**. A second handle member **16** cooperates with handle member **14** to define a handle capable of being selectively compressed in the direction indicated by the letter "A". Such compressive movement of the handle members **14**, **16** facilitates the ability of the device **10** to selectively dissect through tissue, discussed more fully below. In an optional embodiment, a spring member **18** is disposed between handle members **14**, **16** to thus cause the handle members **14**, **16** to remain in a biased state away from one another.

[0036] Attached to, or preferably integrally formed with handle **16** is actuator bar **20**, the latter extending in general parallel relation to tubular housing **12** and terminating near distal end **12***a* thereof. Attached to the distal-most end of actuator bar **20** is a dissector mechanism **22** operative to selectively spread tissue, via a dissector tip, the latter preferably comprising an opposed pair of tissue spreaders **24**, **54**, more clearly seen in **FIGS. 2 and 4**, to thus enable layers of tissue to be selectively spread apart as the device **10** is advanced through the various layers of tissue, namely, subcutaneous fat layer **28**, fascia **30**, peritoneum **32** and ultimately into the abdominal cavity **34**. Another opposed pair of tissue spreaders **60**, **62**, which reflect a preferred embodiment of the present invention, are depicted in FIGS. **5-7**, discussed more fully below.

[0037] Advantageously, the device **10** of the present invention enables such layers of tissue to be selectively penetrated under direct vision by the surgeon to thus enable entry into the peritoneal cavity to be achieved without the risk of damaging organs, vessels, and the like which can and does occur when entry into the abdominal cavity is entered blindly, as per conventional practice.

[0038] To achieve that end, the device **10** is operative to receive a laparoscope **38** within the tubular housing **12** thereof to thus provide a physician with the ability to directly view the sequential dissection of the various layers via the dissector **10** of the present invention. As shown in **FIG. 1**, laparoscope **38** is operatively positioned within the tubular housing **12** such that the distal-most end of the laparoscope **38**a is positioned in close proximity to the dissector mechanism **22** and spreader members **54**, **25** to thus enable the physician to view each step of the dissection process. To facilitate the ability of the device **10** to receive the laparoscope **38**, there is preferably provided a clamp mechanism **42** formed upon distal end **12***b* of the housing **12**, with screw lock **44** to thus enable the same to be locked into position. There may additionally be provided an abutment apparatus or other type of engagement mechanism **12***c* formed with the lumen of housing **12** to prevent the distal end **38***a* of the laparoscope from extending beyond distal end **12***a* of the housing. Once secured into position, the eyepiece provided on the proximal end **38***b* of the laparoscope, as per conventional laparoscopes, enables the surgeon to see and directly view the dissection procedure.

[0039] As further shown in **FIG. 1**, the device **10** is operative to be axially received within the lumen of a conventional laparoscopic port **36** such that once access into the abdominal cavity has been safely achieved, the port **36** may be secured into position so that the subsequent surgical procedure may be performed therethrough, discussed in further reference with respect to **FIG. 3**.

[0040] Referring now to **FIGS. 2 and 4**, and with initial reference to **FIG. 2**, there is shown the means by which dissector mechanism **22** is operative to cause the dissector tip, namely, tissue spreader members **24**, **54**, to selectively dissect through the various layers of tissue to gain access to the abdominal cavity. As is shown, when actuator bar **20** is

retracted in the direction indicated by the letter "B", which occurs through compression of handle members **14**, **16**, diagonally extending arm members **46**, **48** pivotally connected to the distal end of pull bar **20** are operative to rotate inwardly as indicated by the direction "C". A second pair of arm members **50**, **52**, pivotally connected to arms **46**, **48**, respectively, are then consequently operative to rotate outwardly from the distal-most end **12***a* of tubular housing **12**, as indicated by the direction "D", to thus cause tissue spreader members **24**, **54** to cut through and move tissue away therefrom. In this regard, the tissue spreaders **24**, **54**, will be operatively transitionable between a neutral position, as shown in **FIG. 4**, whereby the same are contained within the diameter defined by the distal end **12***a* of the tubular housing **12** and an operative configuration, whereby the tissue spreader members **24**, **54**, will extend beyond the circumference defined by the distal end **12***a* of the tubular housing **12** to thus spread apart the tissue as the distal end **12***a* of the tubular housing **12** is advanced deeper within the patient.

[**0041**] In use, the device **10** is utilized to sequentially spread layers of tissue **28-32** until such time as the peritoneal cavity is accessed, as shown in **FIG. 3**. To achieve that end, tissue spreaders **24**, **54**, will preferably comprise arcuate blade members that cooperatively define a generally conical-like structure when the same assume the neutral position, as shown in **FIGS. 2 and 4**. When the spreader members **24**, **54** assume the operative configuration, the same will extend in diametrically opposed directions to thus cause the tissue to be dissected in an outwardly-extending direction relative to the distal end **12***a* of the housing **12**.

[**0042**] Such mode of action is further illustrated in FIGS. **5-7** with respect to alternatively configured tissue spreaders **60**, **62**, of the dissector tip. As shown in **FIG. 5**, the tissue spreaders **60**, **62**, are shown in the operative position whereby the same extend in diametrically opposed directions from the distal end of the tubular housing **12**. Such tissue spreaders **60**, **62**, in contrast to the preferred embodiment depicted in FIGS. **1-4**, are provided with serrated edges **64**, as may be desired to facilitate the ability of the tissue spreader **60**, **62**, to advance through tissue.

[**0043**] The tissue spreaders **60**, **62**, may further be provided with arcuate voids **66**, **68**, that cooperate to define generally circular or oval-shaped apertures when the tissue spreaders **60**, **62**, assume the neutral position, as shown in **FIG. 6**. Advantageously, by providing arcuate voids **66**, **68**, which define such apertures, there is thus provided channels or access by which the laparoscope **38** (not shown) can directly view the tissue directly ahead of the dissector tip while the tissue spreaders **60**, **62** assume a neutral position as shown in **FIGS. 6 and 7**.

[**0044**] It will be appreciated by those skilled in the art that although depicted as semi-circular blade members, tissue spreaders **24**, **54**, **60**, **62** may take any of a variety of configurations known in the art, and may include any of a variety of tissue spreading mechanisms including additional tissue spreader members. In all cases, however, it is desired that the tissue spreaders be operative to sequentially spread layers of tissue out of the field of vision to be observed by the distal end **38***a* of the laparoscope **38** to thus enable the physician at all times to see the tissue, during both when the tissue spreader members assume either the neutral or operative configurations until such time as the laparoscopic port **36** is advanced into the channel formed by the dissection of tissue by the tissue spreaders and the device **10** removed therefrom, as shown in **FIG. 3**.

[**0045**] At all steps during the procedure the distal end **38***a* of laparoscope **38** is operative to provide the physician with a direct view of the dissection process as the tissue spreader members **24**, **54**, **60**, **62** selectively transition between their neutral position, and the operative tissue spreading configuration. As such, at all times, the physician is able to see each layer of tissue in advance of its dissection and is able to avoid puncturing or otherwise damaging an organ, vessel or other structure. Of further advantage is the fact that the dissector **10** of the present invention is operative to cut and spread apart tissue as the distal end **12***a* of the housing **12** is advanced axially downward. As a consequence, a snug fit is formed about the tubular housing **12**, which in turn provides for a snug fit about the laparoscopic port **36** once the same is ultimately secured into position, as shown in **FIG. 3**.

[**0046**] As will be recognized by those skilled in the art, to the extent dissection can be attained which not only enables the physician to avoid injuring organs, vessels, and the like, but also enables the laparoscopic port **36** to be secured into position with the abdominal cavity in a snug manner to advantageously eliminates or otherwise substantially minimizes any leakage of carbon dioxide gas ultimately used to insufflate the peritoneal cavity. In this respect, not only will entry into the peritoneal cavity be entered in a manner that avoids any risk to any organs, vessels, and the like, it likewise enables a port to be placed into position without the need to provide any sort of insufflation.

[**0047**] Once the laparoscopic port **36** is advanced into the newly dissected incision into the peritoneal cavity, the peritoneal cavity may be insufflated with carbon dioxide as per conventional laparoscopic surgery. The specific laparoscopic procedure may then be performed as per conventional surgical techniques. Along these lines, it is contemplated that the device **10**, and more particularly the tubular housing **12**, thereof, will be specifically configured to fit with either a ten millimeter port or a five millimeter port. It is contemplated, however, that the same may be sized and adapted to fit any of a variety of conventional laparoscopic ports and or adapted to receive and be utilized with any of a variety of laparoscopes to thus enable the same to be readily integrated into conventional medical procedures utilizing conventional laparoscopic surgical devices and the like.

[**0048**] Additional modifications and improvements of the present invention may also be apparent to those of ordinary skill in the art. For example, it is contemplated that the device **10** may include a separate port to enable the peritoneal cavity to be insufflated with carbon dioxide, rather than requiring that the device **10** be withdrawn from the laparoscopic port **36** and the carbon dioxide administered separately. Additionally, actuator bar **20** may be configured such that separation of handle members **14**, **16** causes such bar **20**, via dissector mechanism **22** attached thereto, to selectively dissect through tissue. Thus, the particular combination of parts and steps described and illustrated herein is intended to represent only certain embodiments of the present invention, and is not intended to serve as limitations of alternative devices and methods within the spirit and scope of the invention.

What is claimed is:

**1**. A laparoscopic direct vision port dissector comprising:

a. an elongate tubular housing having proximal and distal ends, said distal end being operative to be inserted within an incision upon a patient, said housing further being operative to receive and securably hold a laparoscope within the lumen thereof and orient the laparoscope to view through the distal end of said housing;

b. a dissector mechanism formed upon said distal end of said housing, said dissector mechanism having a tissue spreading mechanism formed thereon and operatively transitional between:

i) a first neutral position wherein said tissue spreading mechanism extends from the distal end of said housing; and

ii) an operative configuration wherein said tissue spreading mechanism cuts across and extends outwardly relative said distal end of said housing; and

c. a handle mechanism formed upon said proximal end of said housing operative to selectively cause said dissecting mechanism and tissue spreaders to selectively transition between said neutral and operative configurations.

**2**. The dissector of claim 1 wherein said tissue spreader mechanism comprises opposed blade members operative to extend in diametrically opposed directions from said distal end of said housing when said dissector mechanism and spreading mechanism assume said operative configuration.

**3**. The dissector of claim 2 wherein said dissector further includes a clamp mechanism for securably holding said laparoscope into position within said lumen of said housing.

**4**. The dissector of claim 3 wherein said clamp mechanism is formed upon said proximal end of said tubular housing.

**5**. The dissector of claim 1 wherein said tubular housing further includes a stop member formed within the lumen thereof for limiting the distance said laparoscope can extend distally within said tubular housing.

**6**. The dissector of claim 1 further comprising an actuator bar operatively coupled to said handle mechanism and said dissector mechanism, said actuator bar being operative to cause said dissector mechanism and tissue spreading mechanism to selectively transition between said neutral and operative positions when said handle mechanism is actuated.

**7**. The dissector of claim 6 wherein said dissector mechanism comprises a first pair of arms pivotally mounted to said pull bar and a second pair of arms coupled to a respective ones of said first pair of arms and operative to pivot outwardly relative to said first pair of arms, said second pair of arms having tissue spreader members formed on the respective ends thereof that are operative to transition from said neutral and operative configurations as said first and second arm members pivotally move relative one another.

**8**. The dissector of claim 1 wherein said dissector further comprises a channel formed therein for administering an insufflative gas.

**9**. The dissector of claim 1 wherein said dissector is capable of being axially received within a laparoscopic port.

**10**. The dissector of claim 9 wherein said dissector is insertable through a laparoscope having a diameter size ranging from approximately ten millimeters to approximately five millimeters.

**11**. The dissector of claim 2 wherein said opposed blade members cooperate to define a conical-shaped configuration when assuming said first neutral position.

**12**. The dissector of claim 2 wherein said opposed blade members are provided with serrated cutting edges.

**13**. The dissector of claim 2 wherein said opposed blade members are provided with at least one void formed thereon defining a channel through which said laparoscope can view the distal end of said housing.

**14**. The dissector of claim 13 wherein said at least one void formed upon said opposed blade members cooperate to define said channels.

* * * * *

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| [标]申请(专利权)人(译) | KERR STEPHEN | | |
| 申请(专利权)人(译) | KERR STEPHEN | | |
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摘要(译)

一种直接视觉端口解剖器，用于安全进入体腔并放置标准腹腔镜端口，用于腹腔镜手术。该装置包括细长的管状壳体，腹腔镜放置在该壳体内。在管状壳体的最远侧开口处形成的是解剖器机构，其可以选择性地展开并且可操作以在腹腔镜的直视下以逐层方式扩展组织。