

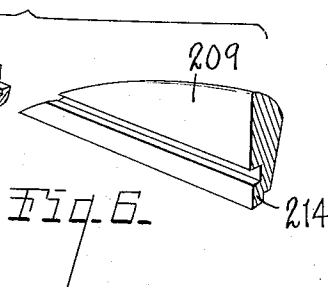
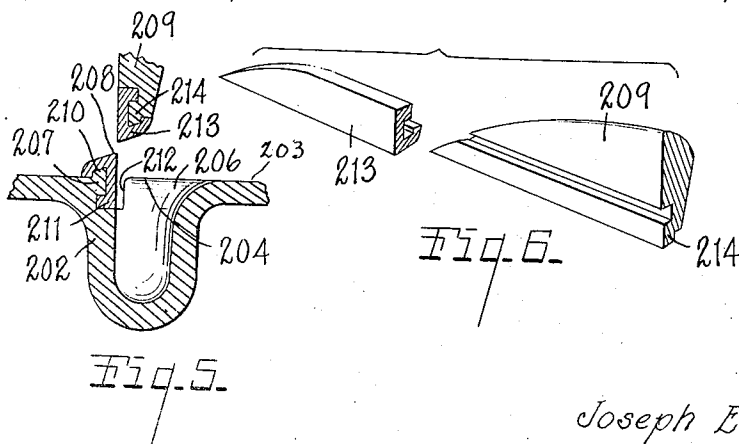
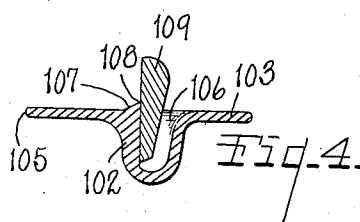
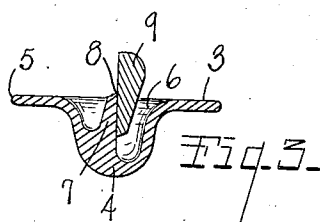
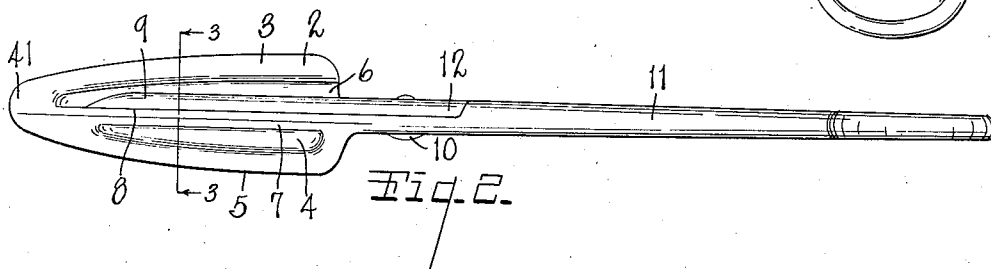
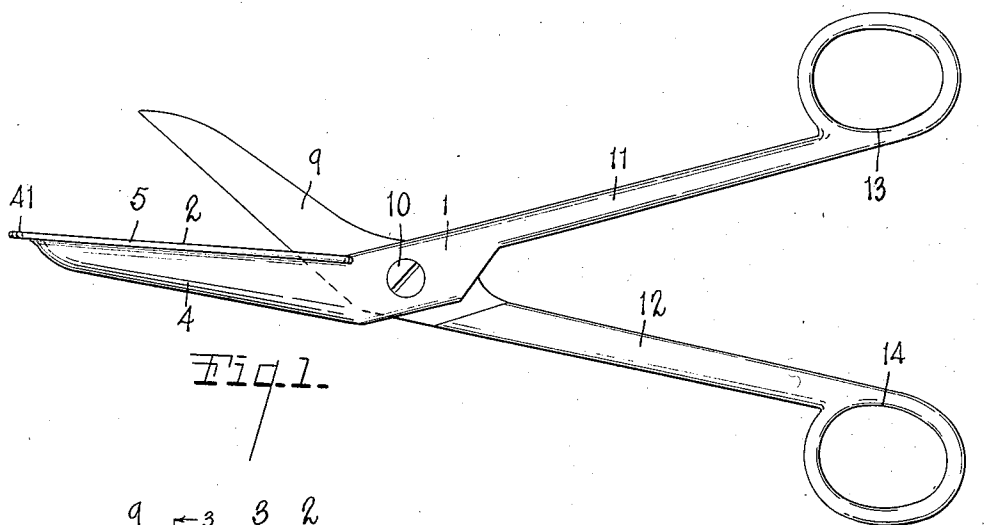
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2,134,265

PERITONEAL DIVIDER

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UNITED STATES PATENT OFFICE

2,134,265

PERITONEAL DIVIDER

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5 Claims. (Cl. 128—318)

This invention relates to surgical instruments and particularly to instruments for dividing the peritoneum to permit access to the bowels for operative treatment or the like.

Heretofore in opening the peritoneum, considerable difficulty has been involved. After the incision is started, the surgeon must exercise the greatest care in making the full incision to see that the bowels or intestines are not cut or otherwise injured during the completion of the incision. It is quite common practice after the incision is started for the surgeon to insert his index and the next finger into the incision and along the line of incision to keep the bowels or intestines back away from the peritoneum during the completion of the incision. A pair of scissors or a knife is then employed, cutting above the fingers. This method of making the incision is very unsatisfactory. The insertion of the fingers does not fully serve the purpose of protecting the bowels or intestines and of holding the peritoneum in position for cutting. In many instances, the bowels or intestines are so tightly packed under the peritoneum that they tend to pop out as the incision is made. The surgeon is confronted with the necessity for holding the intestines down and with the necessity for raising the peritoneum for cutting, two opposed motions which cannot be satisfactorily executed. The intestines tend to come around the fingers and get in a position in which great skill and care must be exercised to prevent the knife or scissors from cutting them. As the incision is made, packing must be employed to prevent the intestines from coming out the incision and the manipulation of the intestines to pack them back into the cavity results in trauma to the peritoneum and to the intestines, resulting in peritoneal insult, the shock of which in many instances may result in post-operative death or illness which could have otherwise been avoided. The handling, pushing and packing may result in inflammation and the presence of an excessive amount of packing may lead to the formation of adhesions as the patient recovers.

In making the incision, the presence of adhesions may cause considerable difficulty when the fingers of the surgeon are inserted as above described. Considerable manipulation may be necessary to break down new adhesions and this results in further peritoneal insult. In some cases a trowel is inserted in the incision and the incision is made over such a trowel. This necessitate the insertion of a separate instrument in the incision and results in peritoneal insult with

the results above pointed out. Such a trowel is not satisfactory when adhesions are present and using either of the prior art methods results in a considerable loss of time. It is well known that any extension of the time that the patient is under anaesthesia may result in complications and will certainly prejudice the chances of a successful recovery by the patient.

The objects of this invention are:

First, to produce a peritoneal divider which will eliminate the peritoneal insult and the loss of time in making an incision in the peritoneum.

Second, to produce such a peritoneal divider which may be inserted after the preliminary incision is made and which may be used to protect the bowels or intestines from accidental cutting and which at the same time properly supports and holds the peritoneum for the incision.

Third, to provide such an instrument having a member for insertion under the peritoneum which member is provided with a surface for engaging the peritoneum, and which member carries cutting equipment for dividing the peritoneum.

Fourth, to provide such an instrument having a member for insertion which member is properly shaped and formed to serve as a guard for the intestines and to serve as an implement for breaking away fresh adhesions and for serving as a feeler and guide for guiding the cutting equipment when old, firmly established adhesions are encountered.

Other objects and advantages pertaining to details and economies of construction and operation will appear from the description to follow. Preferred embodiments of my invention are illustrated in the accompanying drawing, in which:

Fig. 1 is a side view of my improved peritoneal divider.

Fig. 2 is a top plan view of my peritoneal divider with the blades in closed position.

Fig. 3 is a detail sectional view on line 3—3 of Fig. 2.

Fig. 4 is a view similar to Fig. 3 showing a different form of my invention.

Fig. 5 is a sectional view similar to the section 3—3 of a still different form of my invention showing the blades in open position.

Fig. 6 is a perspective view showing a blade with a removable cutting edge as used in the modification of my invention shown in Fig. 5, the cutting edge being shown in disassembled relationship.

My improved peritoneal divider 1 consists of a member 2 for insertion under the peritoneum.

The member is provided with a substantially flat upper surface 3 for engagement with the inner or under side of the peritoneum. The bottom 4 of the member 2 is rounded as shown. The member 2 tapers to the front, as shown in Fig. 2, to form a blunt leading point 41. The member is formed with a dull edge 5 therearound. A well 6 is provided extending longitudinally of the member 2 and a blade 7 extends from the bottom of the well 6 and extends longitudinally of the well 6 and of the member 2. The cutting edge 8 of the blade is substantially level with the upper surface 3 of the member 2. This blade may be as much as one-eighth of an inch above the surface 3 or may be slightly below it, because as the peritoneum is supported on the upper surface 3 of the member 2 there is sufficient stretch to permit this variation. By having the blade 7 extend slightly above the edge, it is possible to grind it for sharpening several times before it is down low enough in the well 6 to interfere with the operation of the divider. A blade 9 is pivoted at 10 at the rear of the member 2 in cooperative shearing relationship with the blade 8. This blade 9 fits within the well as the blade is sheared past the blade 7 and the cut made in the peritoneum.

A handle 11 is formed integral with the member 2 for supporting the same and a handle 12 is provided for the blade 9 for manipulating the same to obtain shearing action. Finger holes may be provided as at 13 and 14.

In the modification of my invention shown in Fig. 4, instead of providing a blade 7 extending from the bottom of the well 6, I provide a well 106 extending longitudinally of the member 102. One longitudinally extending edge 107 of the well is provided with a cutting edge 108 which cooperates with the blade 109. The blade 109 shears past the cutting edge 108 and is received in the well 106. The dull edges 105 are similar to the edges 5 and the member 102 is in all respects similar to the member 2 except as pointed out.

In Figs. 5 and 6, I show a slightly different arrangement. The member 202 is substantially similar to the members 2 and 102 except that one longitudinally extending edge 207 of the well 206 is formed as a seat 210 for slidably receiving a blade 211 having a cutting edge 208. A notch 212 is provided near the front end 204 of the member 202 to permit the blade to be slid onto the seat which is formed as shown for retaining the blade in position. The member 209 is provided with a blade 213 similar to the blade 211, fitting on a seat 214. This modification of my invention has particular advantage in that if the blades become dull it is not necessary to grind them for sharpening, but new blades may be inserted, thus maintaining the relationship between the cutting edge of the blade and the top 203 of the member 202 so that the cutting edge of the blade may be kept substantially level with the top 203.

In employing my invention, the member 2, 102 or 202 is inserted in the preliminary incision. The peritoneum is stretched over the upper surface 3, 103 or 203 and the blades sever the peritoneum. As the incision advances, the member 2, 102 or 202 is advanced along under the peritoneum and the peritoneum lying on the top thereof successfully prevents the bowel or intestines from coming in contact with the cutting edges. The leading point of the member with its dull edge will separate new adhesions which have not become firmly established without any harm

at all to the patient and with much greater celerity than is possible when using prior art methods. If the leading point encounters an old, well established adhesion, the surgeon is quickly apprised of this fact and can change his line of incision if necessary. In employing this instrument it is not necessary to manipulate or pack the intestines out of the way to the extent necessary in using the prior art methods and peritoneal insult with its deleterious effects can be avoided to a great degree. I have found in using this instrument that I can eliminate five minutes or more of time in performing an abdominal operation, which is of great benefit to the patient as will be fully appreciated. I have found that, particularly in handling infected cases, the surgeon is greatly benefitted by the use of my instrument in that he does not have to expose his hands to the possibility of infection which might result from insertion of his hands into the infected cavity to make the incision.

I have shown and described my invention in the embodiments preferred by me and wish to claim the same both broadly and specifically as pointed out in the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A peritoneal divider comprising a member for insertion under the peritoneum and having a rounded bottom and a substantially flat upper surface for engaging the inside of the peritoneum during the dividing operation, said member tapering to a blunt leading point at the front and having a dull relatively wide flat blade-like flange therearound extending in the plane of said upper surface, a blade extending longitudinally of said member and having a top cutting edge substantially on a level with said upper surface and substantially at right angles thereto, a well in said member adjacent said cutting blade to receive a pivoted cutting blade, a second blade pivoted at the rear of said first blade in cooperating shearing relationship and adapted to fit within said well, and handles at the rear for supporting said divider and for manipulating said pivoted blade to obtain a shearing action thereof on said first blade.

2. A peritoneal divider comprising a member for insertion under the peritoneum and having a substantially flat relatively wide upper bearing surface for engaging the inside of the peritoneum during the dividing operation, a blade extending longitudinally of said member and substantially at right angles thereto and having a top cutting edge substantially on a level with said upper surface, a well in said member adjacent said cutting blade to receive a pivoted cutting blade, a second blade pivoted at the rear of said first blade in cooperating shearing relationship and adapted to fit within said well, and handles at the rear for supporting said divider and for manipulating said pivoted blade to obtain a shearing action thereof on said first blade.

3. A peritoneal divider comprising a member for insertion under the peritoneum and having an upper surface for engaging the inside of the peritoneum during the dividing operation, said member tapering to a blunt leading point at the front and having a dull relatively wide flat blade-like flange therearound, extending in the plane of said upper surface, a blade extending longitudinally of said member substantially at right angles to said upper surface and having a top cutting edge substantially on a level with said

upper surface, a well in said member adjacent said cutting blade to receive a pivoted cutting blade, a second blade pivoted at the rear of said first blade in cooperating shearing relationship and adapted to fit within said well, and handles at the rear for supporting said divider and for manipulating said pivoted blade to obtain a shearing action thereof on said first blade.

4. A peritoneal divider comprising a member for insertion under the peritoneum having a substantially flat upper surface for engaging the inside of the peritoneum during the dividing operation, said member tapering to a blunt leading point at the front and having a dull relatively wide flat blade-like flange therearound extending in the plane of said upper surface, a seat on said member for a removable cutting blade, a removable cutting blade on said seat and having its cutting edge substantially on a level with the upper surface of said member and substantially

at right angles thereto, a blade pivoted to the rear of said member in cooperating shearing relationship with said removable blade, and handles at the rear for supporting said divider and for manipulating said pivoted blade to obtain shearing action thereof on said removable blade.

5. A peritoneal divider comprising a member for insertion under the peritoneum comprising a well having one longitudinal edge thereof formed as a cutting blade, said well having a dull relatively wide flat blade-like flange extending around the front and sides thereof and substantially at right angles to said edge formed as a cutting blade, a blade pivoted at the rear of said well in cooperating shearing relationship with said cutting edge, and handles at the rear for supporting said divider and for manipulating said pivoted blade to obtain action thereof on said edge of the well formed as a blade.

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