

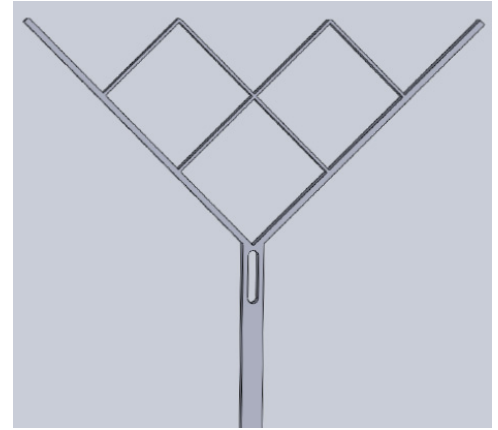


Minimally Invasive Surgical Retractor

BYU #2013-054

DESCRIPTION

This invention is a compliant surgical retractor which utilizes a lattice suspended between two actuating fingers in order to assist with organ manipulation. During minimally invasive or laparoscopic surgery, the retractor can be inserted through a 5mm to 12mm trocar and may be used to move organs to make way for surgical instruments or as a clamping device. A variety of actuation methods may be used to spread the fingers, and the retractor can be fitted to work with robotic instruments as well as manual tools. The device may be used repeatedly after sterilization or can be designed to be disposable after one use.



PROBLEM SOLVED

Traditional surgical retractors suffer from a number of limitations, including poor grip, inability to apply sufficient force to move larger organs, and a poor ability to be inserted through a small space and then expand and compress easily. Due to the many small parts used to create joints, they are also difficult to manufacture and sterilize and may pose the risk of small parts falling off during surgery. This design addresses these shortcomings, and provides improved grip, improved rigidity, improved safety, and improved ability to enter through a small space and expand and compress as needed. Because this retractor can be manufactured in one piece it is also easier to manufacture and sterilize.

KEY ADVANTAGES

- » *Improved safety*
- » *Easy to sterilize*
- » *Improved functionality*

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APPLICATIONS

This retractor would be used in a variety of surgical procedures, primarily in minimally invasive or laparoscopic surgeries. It could also be used by veterinarians.

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