

SELF KNOTTING SUTURING INSTRUMENT

— A Minimally Invasive Surgical Instrument
(New Product Idea)

Inventor / Patent Holder:

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Introduction -

- The present invention relates to the field of suturing surgical instrument.
- In particular, the present disclosure pertains to the suturing instrument that enables control of a suturing needle with pre-loaded suture during operation of suturing tissues.
- As per the inventor, who is himself a Practicing medical surgeon, since suturing is the prime and most important procedure in a surgery, this suturing instrument can have tremendous marketing potential upon execution.
- To the best of our knowledge and understanding, no similar prototype or Suturing instrument is available in the global market.

The current technology -

- The current technology for suturing the body tissue utilises the use of needle holder, forceps and wobbly suture with needle.
- This same old conventional technique is used in all Open surgeries and Minimally Invasive Surgeries (Laparoscopic and Robotic).

Current Difficulties faced while Suturing -

- Suturing of body tissues in a deeper plane by the presently available conventional, Laparoscopic and robotic instruments (Needle holder and wobbly sutures) presents the following difficulties:
 - It is a time consuming technique of difficult procedure.
 - The currently available instruments are difficult to operate and a Surgeon needs a long time to master the technique.
 - Difficulties with grasping the tissue firmly, to put the sutures securely and to recapture the needle without causing injury to the neighbouring tissues.
 - In space constrained environment, such as during laparoscopic and robotic surgery chances of needle pricking and injuring the surrounding vital organs are high.
 - During suturing procedure, the needle may be lost in the abdominal cavity or the deeper tissue planes, which may cause serious complications and it is very difficult to retrieve the missing needle, hence a surgeon spends a lot of time during this process.
- Hence, there is a need of an improved suturing instruments that can overcome above-mentioned challenges.

About the Invention -

- This is a sophisticated and revolutionary suturing surgical instrument in which the needle holder and sutures are assembled within it to perform interlocking continuous / intermittent suturing on its own without the manual rotatory wrist movement of surgeon.
- Thus reducing the duration of surgery and increasing the efficiency of the surgeons.
- Hence, making the suturing procedure very easy, especially in limited operating field and consumes less time.

Advantages of newly invented instrument -

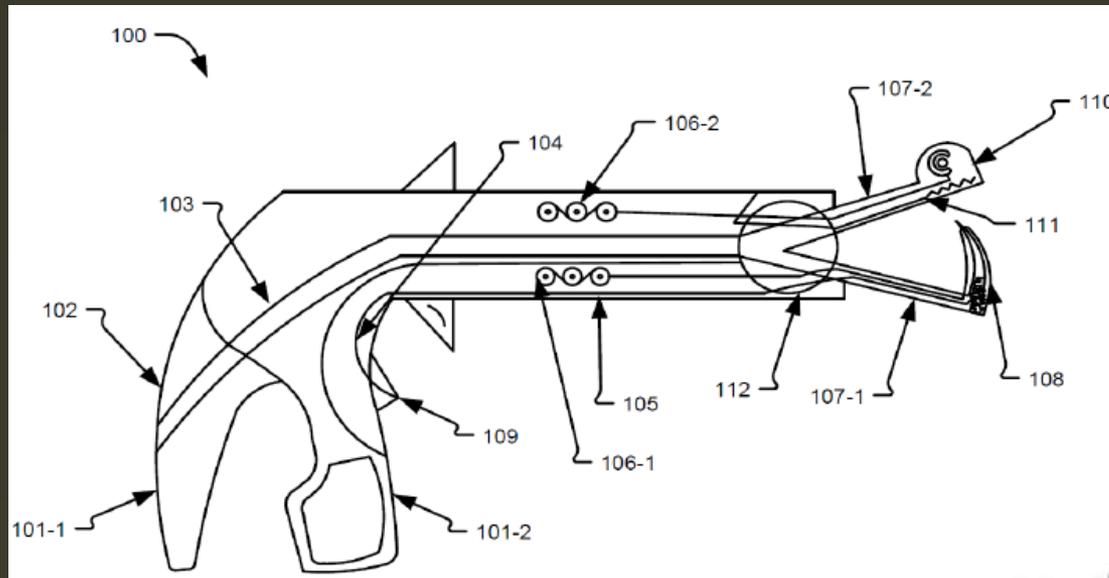
- 1) Easier to perform suturing in deeper planes, where the available space is very minimal or deep.
- 2) Zero chance of detachment of needle during surgery thereby losing a needle inside, since the suturing needle is fixed to the instrument
- 3) Minimal chances of injuring vital organs
- 4) Minimal chances of needle prick injury to operating or assisting surgeons and its complications
- 5) Can also be used in Minimal access surgeries like laparoscopic and robotic surgeries
- 6) Eliminates requirements of accessories like needle holder and pickup forceps needed for suturing.
- 7) Instrument can be easily operated by a single hand, rendering the other hand free for other tasks such as tissue dissection and clearing the operative field.

Applications -

The given instrument has a relatively simple mechanical design and can be used in different surgical branches like...

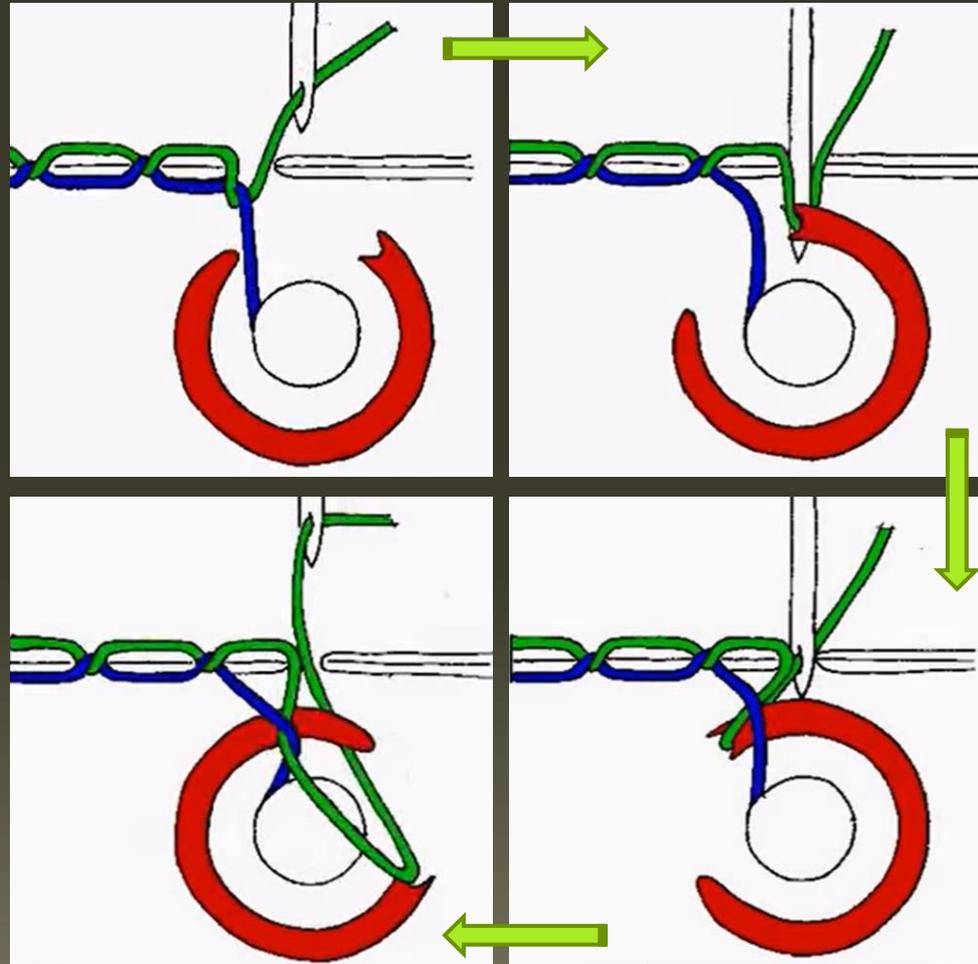
- 1) Minimally Invasive Surgeries
- 2) General surgery
- 3) Gynaecological surgeries
- 4) Bariatric surgery
- 5) Gastro-intestinal surgeries
- 6) Emergency trauma care and
- 7) All other open surgeries.

Exemplary Diagram illustrating the invention instrument -



This is a 10mm diameter instrument, which can be inserted into abdominal cavity by closing the jaw, through cannula in Minimal access surgeries.

Diagrammatic representation of Self Knotting System -



Expectations -

- Patentee is interested in sale of IP
- Patentee wishes to offer Licensing Rights.

Additional Note -

To safeguard the Technology and keep all its technical details confidential, further details will be shared with interested entities pursuant to execution of a mutual Non Disclosure Agreement (NDA).

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