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(12) **United States Patent**
Shohat

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(54) **CONTROLLED TISSUE DISSECTION SYSTEMS AND METHODS**

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(51) **Int. Cl.**
A61M 29/02 (2006.01)
A61B 8/12 (2006.01)
(Continued)

(52) **U.S. Cl.**
CPC ***A61B 8/12*** (2013.01); ***A61B 8/445*** (2013.01); ***A61B 17/320016*** (2013.01); *A61B 2017/320048* (2013.01); *A61B 2034/107* (2016.02)

(58) **Field of Classification Search**
CPC A61L 8/12; A61L 8/445; A61L 17/320016; A61L 2019/507; A61L 2017/320048
See application file for complete search history.

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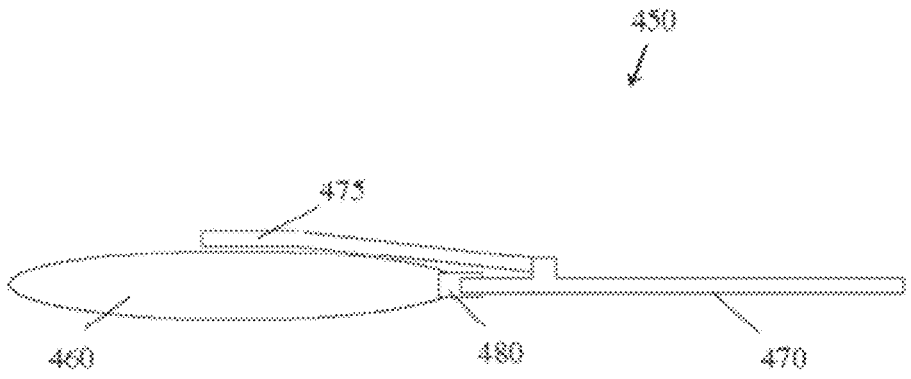
(57) **ABSTRACT**

Tissue dissecting device, including an inflatable bladder configured to be inserted into a body via an introducer tube in a compact deflated state, and to be inflated to a substantially planar form in a manner which dissects tissue. Method for dissecting tissue, including inserting an inflatable bladder, in a deflated state, via an introducer tube, into a space in a body, and inflating the bladder to substantially planer form, thereby dissecting tissue. Method for dissecting tissue, including inserting an introducer tube via an incision into a body, inserting an inflatable bladder, in a defined state, via the introducer tube, into a space in the body, pulling the introducer tube back at least a length of the deflated bladder, inflating the bladder, via a filling tube, to substantially planar form, thereby dissecting tissue, disconnecting the filling tube from the bladder, retracting the filling tube and the introducer tube from the body.

10 Claims, 19 Drawing Sheets



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(12) **United States Patent**
Shohat et al.

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(54) **METHOD OF FORMING A SEAMLESS BLADDER**

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(51) **Int. Cl.**

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(58) **Field of Classification Search**

None

See application file for complete search history.

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(57) **ABSTRACT**

A tissue displacement/separation device is provided. The device includes a bladder which is expandable between a first tissue and a second tissue of a body. The bladder has an expanded shape which is selected capable of displacing or separating the first tissue from the second tissue in a manner suitable for protecting the first tissue from an effect of a treatment applied to the second tissue.

34 Claims, 9 Drawing Sheets