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Kortenbach

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- (54) **ENDOSCOPIC INSTRUMENT**
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- (*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 612 days.
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- (52) **U.S. Cl.**
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(Continued)

(56) **References Cited**
U.S. PATENT DOCUMENTS

3,203,421 A 8/1965 Bialick
3,595,201 A 7/1971 Oudenhoven
(Continued)

FOREIGN PATENT DOCUMENTS

CA 2 188 114 4/1997
EP 0 770 354 5/1997

OTHER PUBLICATIONS

Swain et al., "An endoscopic stapling device: the development of a new flexible endoscopically controlled device for placing transmural staples in gastrointestinal tissue," *Gastrointestinal Endoscopy*, vol. 35, No. 4, Jul./Aug. 1989, pp. 338-339.
(Continued)

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(57) **ABSTRACT**

An endoscopic surgical instrument for deploying a two part fastener having a male fastener part and a female fastener part, includes a tube having a proximal end and a distal end. An end effector is coupled to said distal end of said tube and is configured to hold the male fastener part and the female fastener part in opposed relation. An actuator is coupled to said proximal end of said tube and is configured to actuate the end effector. A shearing device may be positioned proximate the end effector to shear off a tip of the male fastener part after the male and female fastener parts are moved into locking relation. In addition, the surgical instrument may include a male fastener part having a shaft with a plurality of detent positions. Further, the male fastener part may include a base and a shaft pivotally connected to the base.

24 Claims, 41 Drawing Sheets

