



US005307976A

United States Patent [19]

[11] Patent Number: **5,307,976**

Olson et al.

[45] Date of Patent: **May 3, 1994**

[54] **LINEAR STAPLING MECHANISM WITH CUTTING MEANS**

[56] **References Cited**

U.S. PATENT DOCUMENTS

[75] Inventors: **Todd Olson**, Loveland; **Dan Meiser**, Oxford; **Gary Steed**, Cleves; **Eric Huffman**, Loveland; **Matthew Otten**, Cincinnati; **Ronald VanOverloop**, West Chester; **Darrel Powell**, Cincinnati; **Thomas Knodell**, Loveland; **Edward Rhad**, Fairfield; **Ralph Chen**, Cincinnati; **Robert Cook**, West Chester, all of Ohio

4,754,909	7/1988	Barker et al.	227/19
4,784,137	11/1988	Kulik et al.	227/19 X
4,892,244	1/1990	Fox et al.	227/19 X
4,955,959	9/1990	Tompkins et al.	227/180 X
5,040,715	8/1991	Green et al.	227/8 X
5,071,052	12/1991	Rodak	227/19 X
5,170,925	12/1992	Madden	227/19 X

Primary Examiner—Rinaldi Rada
Attorney, Agent, or Firm—Paul A. Coletti

[73] Assignee: **Ethicon, Inc.**, Somerville, N.J.

[57] **ABSTRACT**

[21] Appl. No.: **917,636**

A stapler mechanism is described which contains a stapling assembly, and anvil assembly, firing means and knife means. These means are activated by a firing trigger. The anvil assembly is closed upon the stapling assembly by means of a closure trigger. The firing trigger is inoperable until the closure trigger has been activated. Another mechanism in the stapler is capable of locking the closure trigger after use so it does not spring open inadvertently before use of the firing trigger. Additionally, the stapler mechanism allows forward motion of both triggers and also is capable of allowing reverse motion of the closure trigger to open the mechanism.

[22] Filed: **Jul. 20, 1992**

Related U.S. Application Data

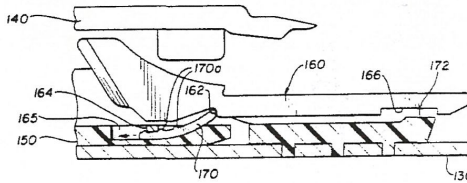
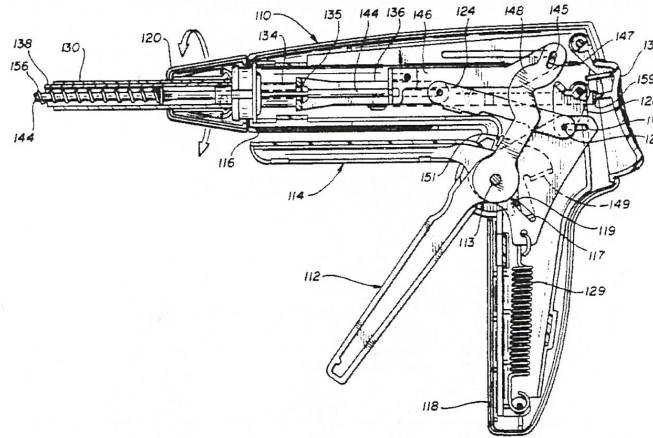
[63] Continuation-in-part of Ser. No. 779,436, Oct. 18, 1991, abandoned.

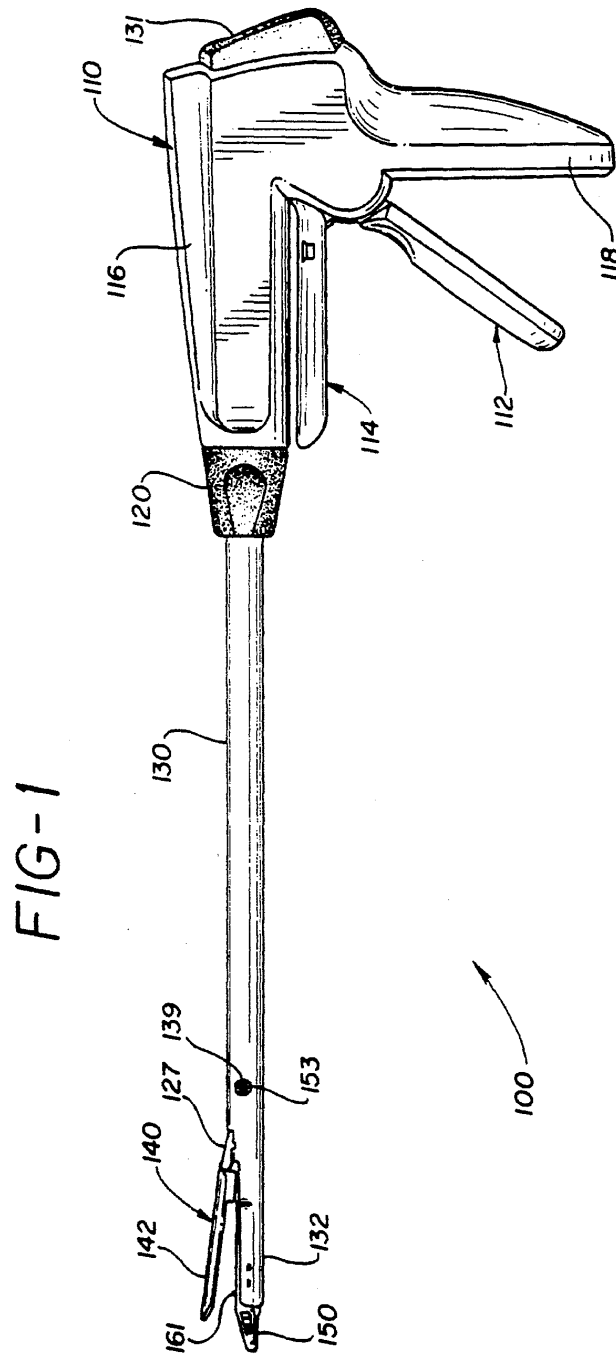
[51] Int. Cl.⁵ **A61B 17/072**

[52] U.S. Cl. **227/178; 227/19; 227/180**

[58] Field of Search 227/19, 180, 176, 178

22 Claims, 18 Drawing Sheets





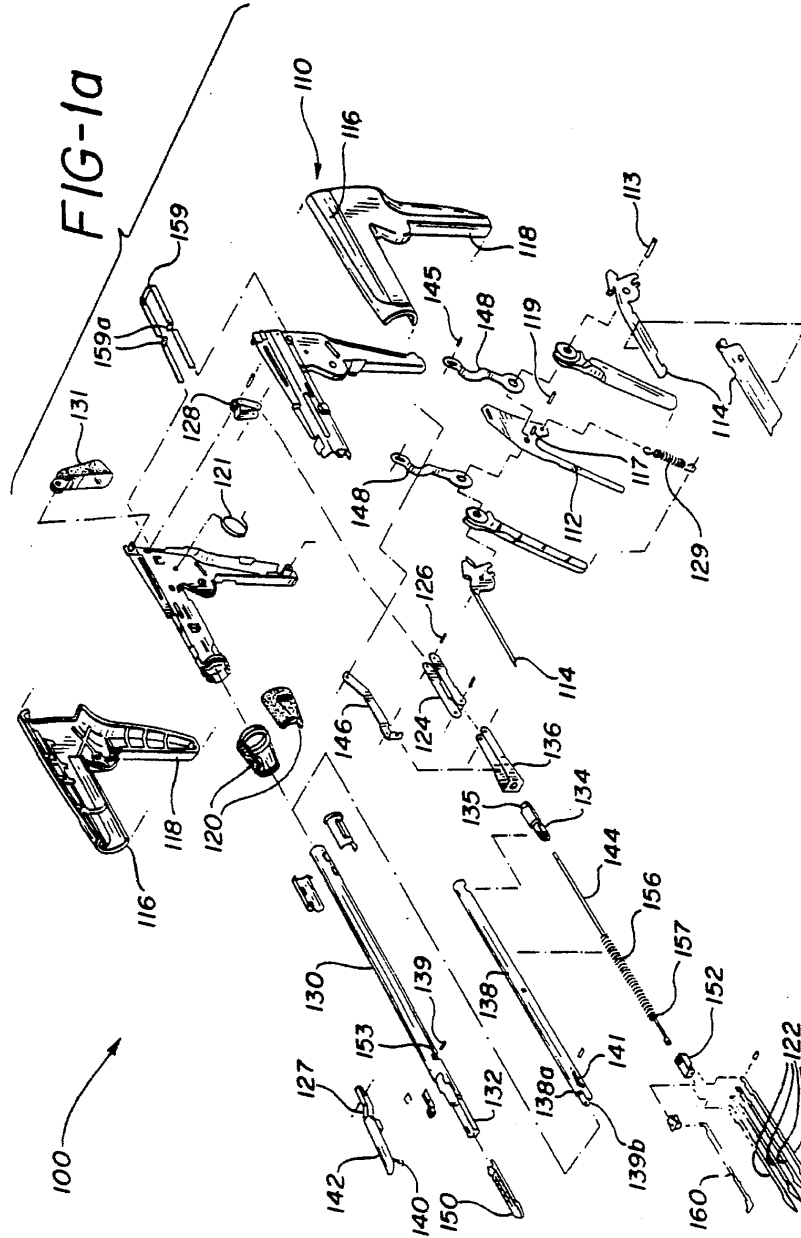
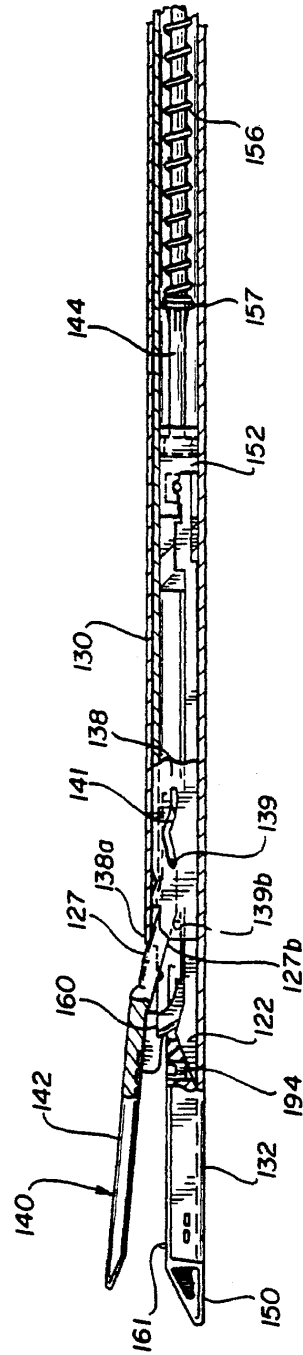


FIG-2a



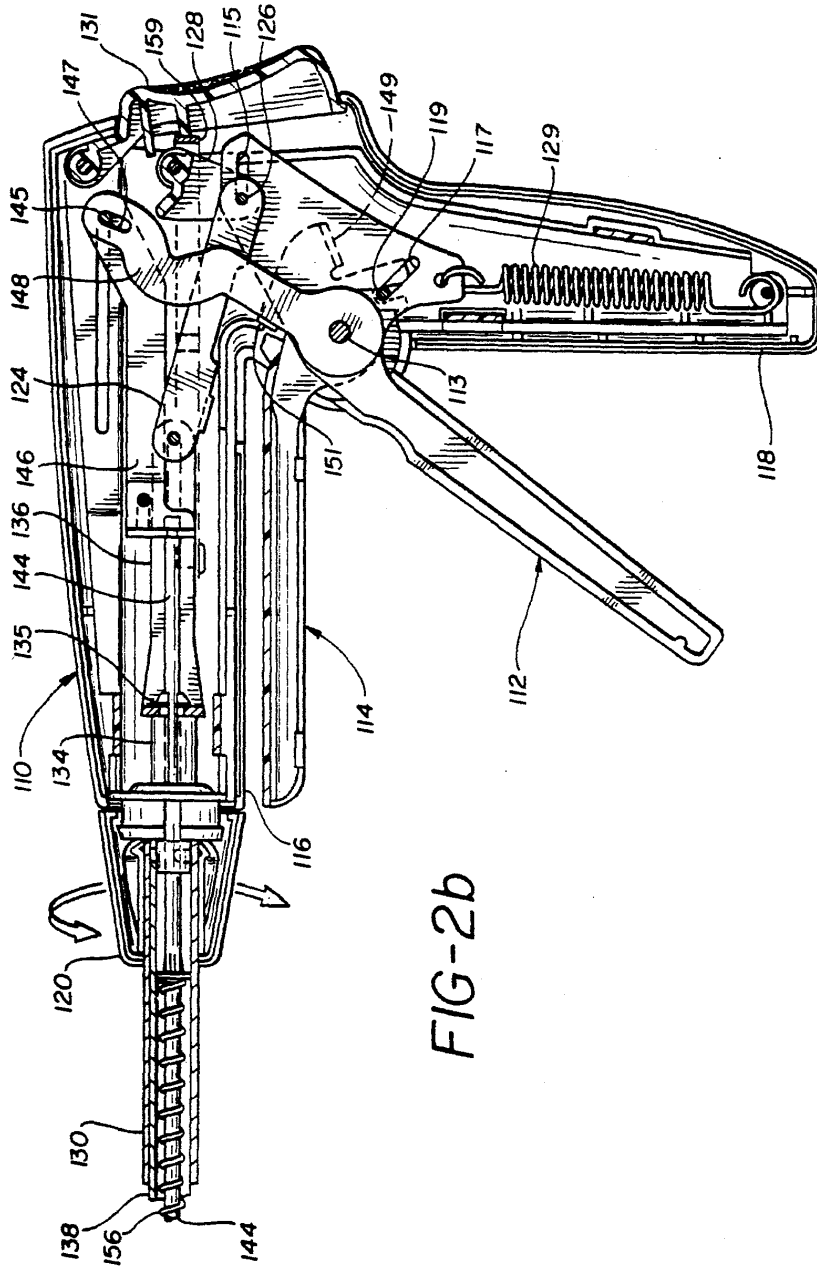


FIG-2b

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.