



US005383880A

United States Patent [19]
Hooven

[11] **Patent Number:** **5,383,880**
[45] **Date of Patent:** **Jan. 24, 1995**

[54] **ENDOSCOPIC SURGICAL SYSTEM WITH SENSING MEANS**
[75] **Inventor:** **Michael D. Hooven**, Cincinnati, Ohio
[73] **Assignee:** **Ethicon, Inc.**, Somerville, N.J.
[21] **Appl. No.:** **991,619**
[22] **Filed:** **Dec. 16, 1992**

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

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 822,478, Jan. 17, 1992, abandoned.
[51] **Int. Cl.⁶** **A61B 17/12**
[52] **U.S. Cl.** **606/142; 606/213; 227/175; 227/901**
[58] **Field of Search** **227/19, 901, 175; 173/6, 10, 176; 606/213, 142**

[57] **ABSTRACT**
An endoscopic surgical system which includes an instrument for carrying out a step in the procedure. The instrument is power operated and the system includes sensing means to control the operation of the instrument.

6 Claims, 15 Drawing Sheets

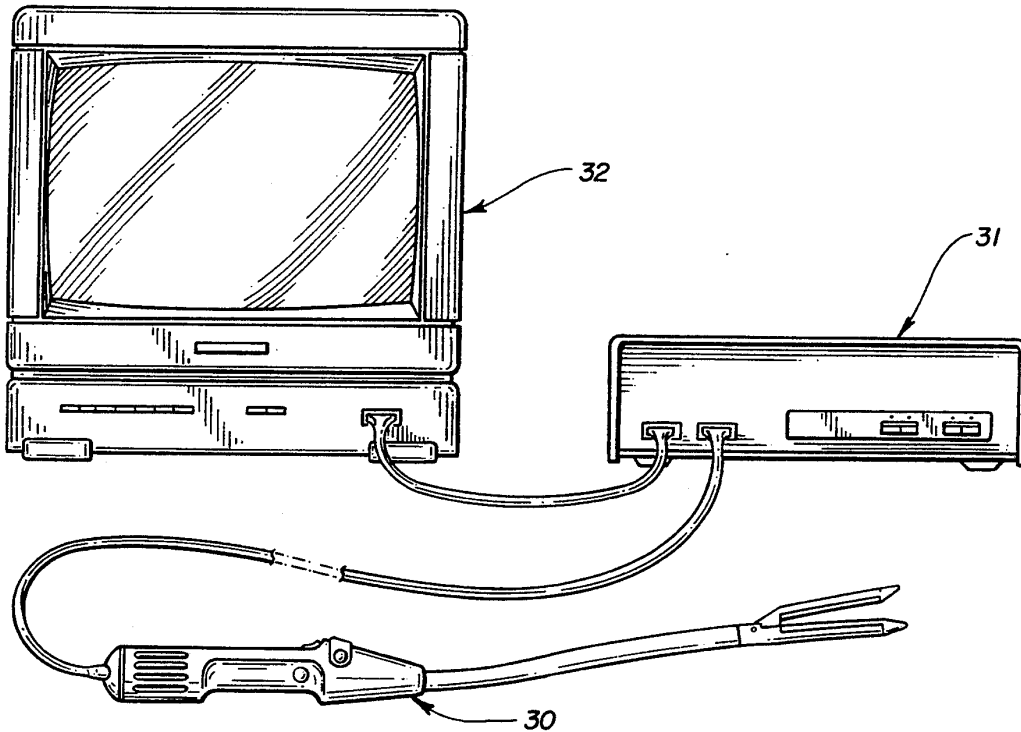
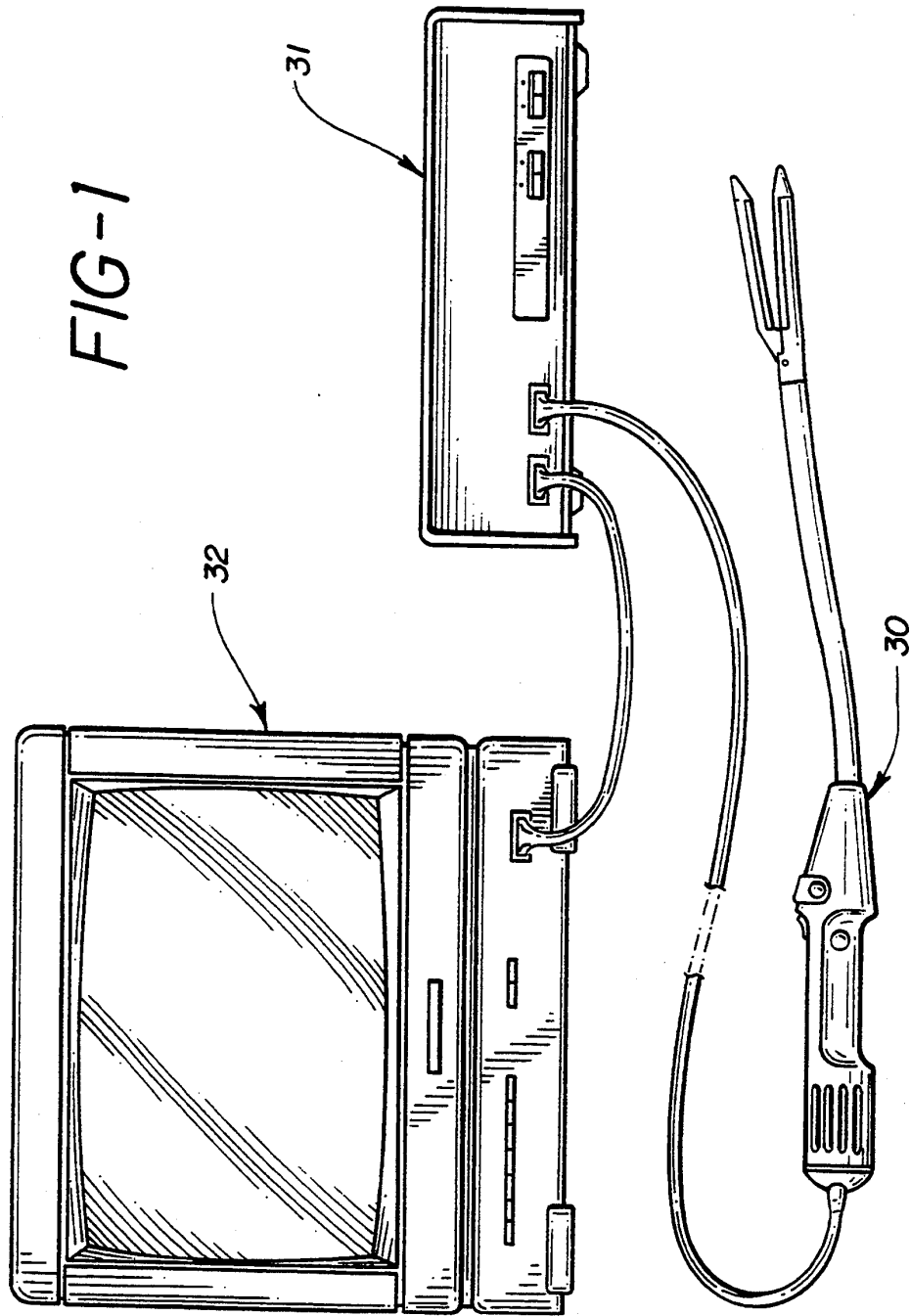


FIG-1



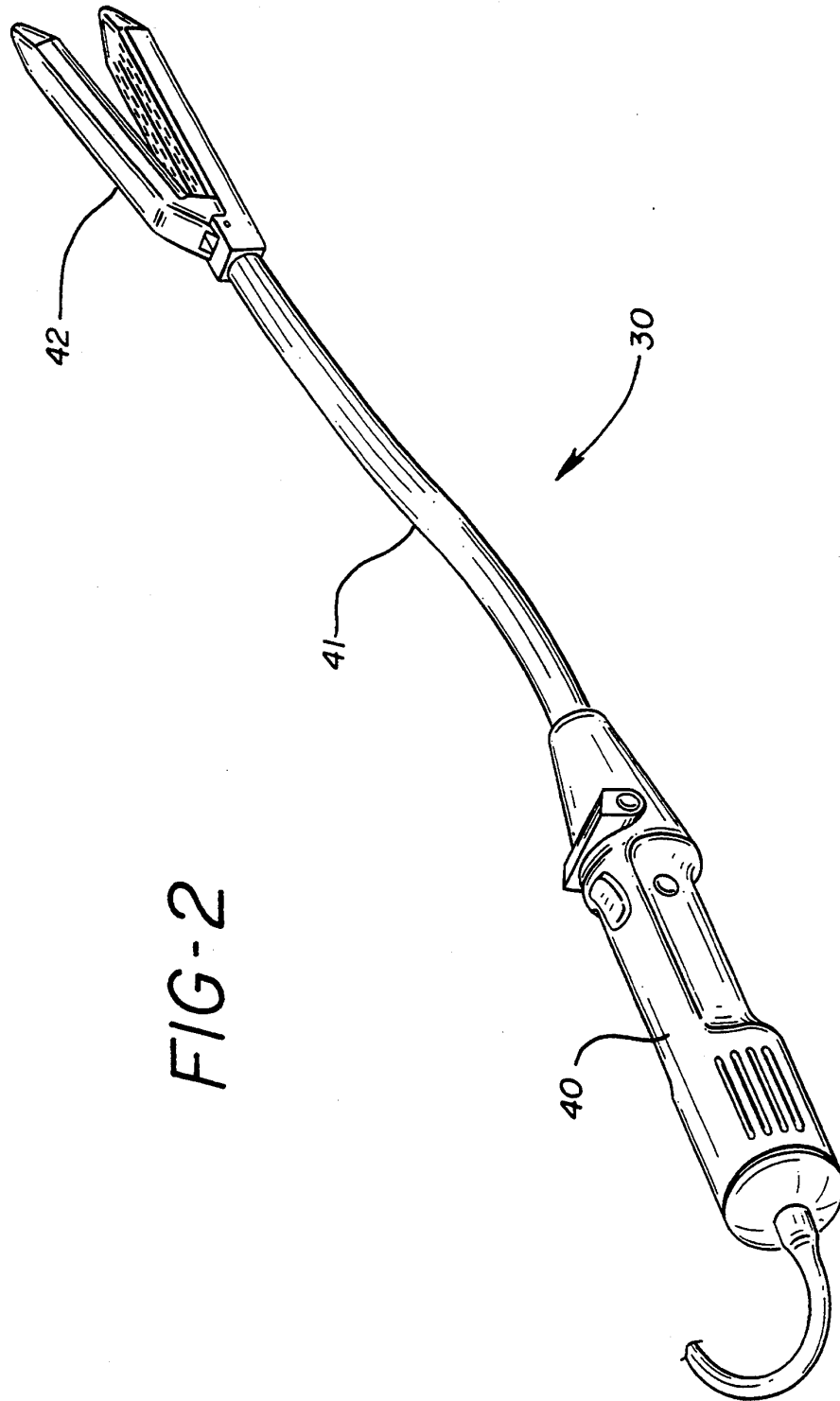


FIG-2

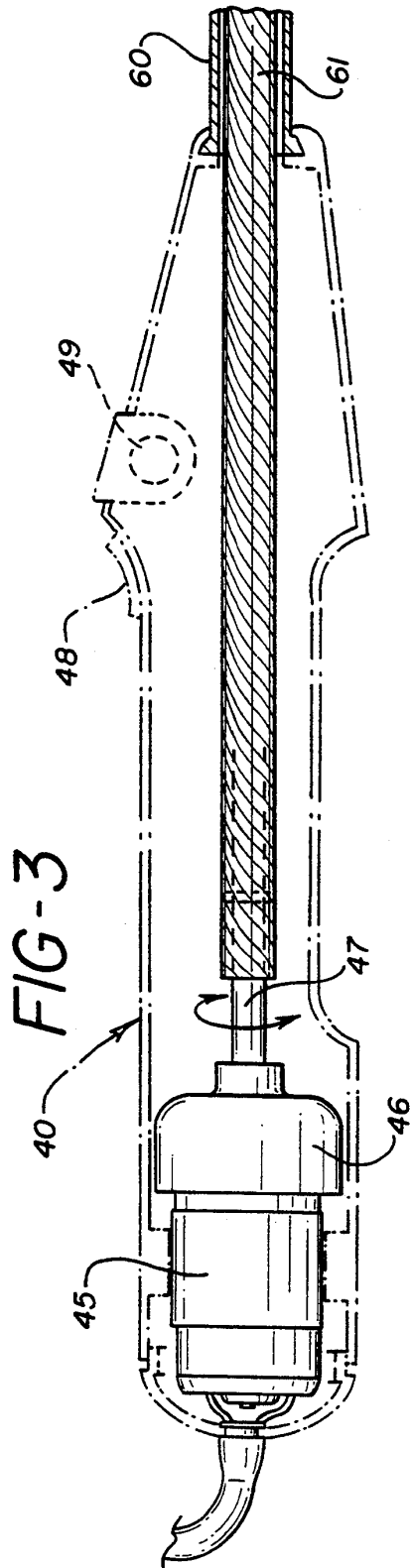


FIG-3

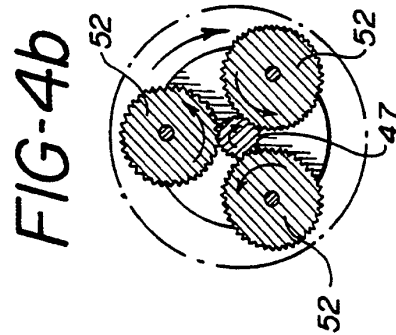


FIG-4b

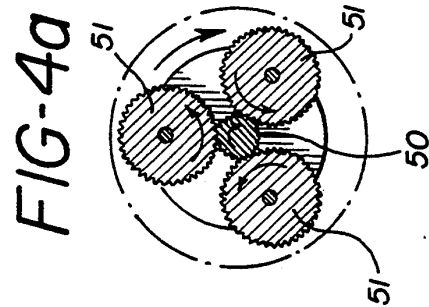


FIG-4a

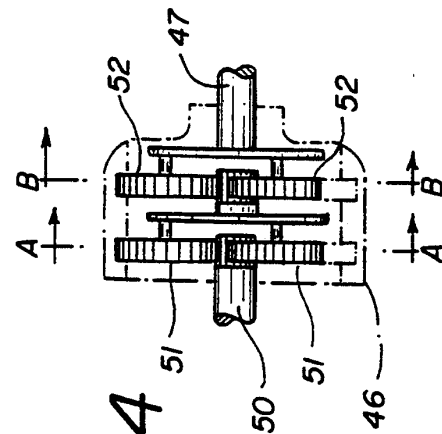
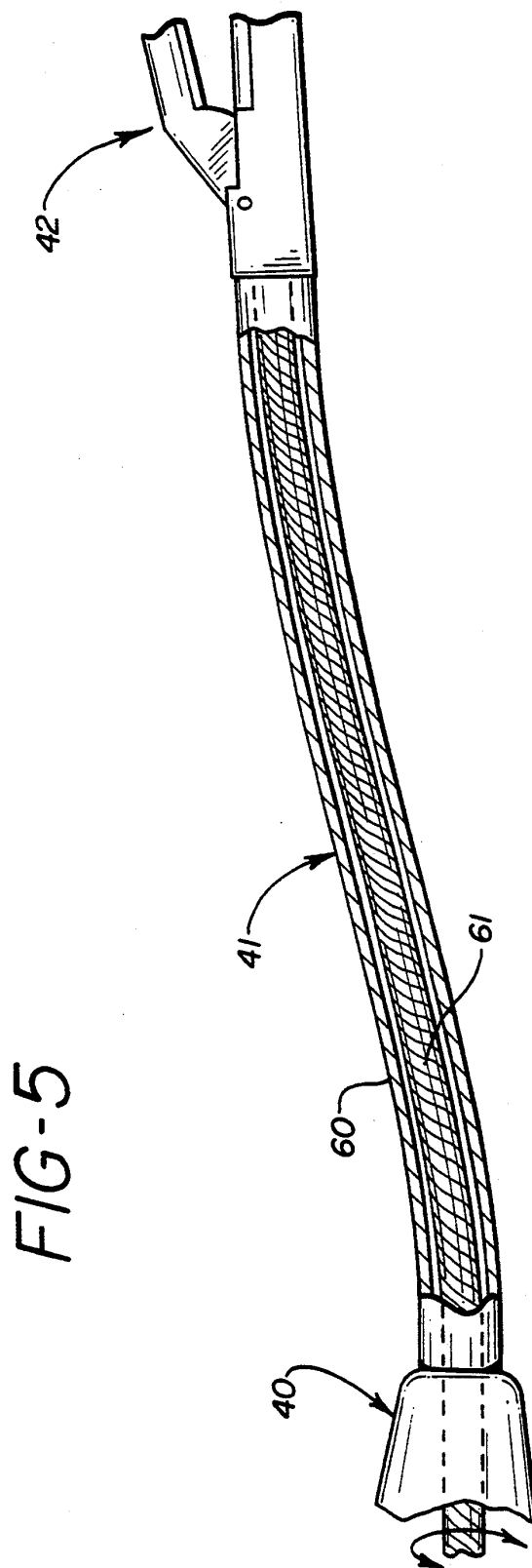


FIG-4



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