US005372585A

United States Patent [19]

Tiefenbrun et al.

[11] Patent Number: 5,372,585

[45] Date of Patent: Dec. 13, 1994

[54] INSTRUMENT AND ASSOCIATED METHOD FOR APPLYING BIOLOGICALLY EFFECTIVE COMPOSITION DURING LAPAROSCOPIC OPERATION

[76] Inventors: **Jonathan Tiefenbrun**, 62 Country Rd., Mamaronek, N.Y. 10543; **Peter J. Wilk**, 185 W. End Ave., New York, N.Y. 10023

[21] Appl. No.: **84,695**

[22] Filed: **Jun. 29, 1993**

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 866,814, Apr. 9, 1992, Pat. No. 5,223,939.

[51] **Int. Cl.**[5] **A61M 31/00; A61B 17/36**

[52] **U.S. Cl.** **604/59;** 604/57; 606/15; 606/213

[58] **Field of Search** 606/2, 7–10, 606/13–16, 213, 214; 604/21, 57, 59, 60, 61, 51; 128/DIG. 8; 607/89

[56] **References Cited**

U.S. PATENT DOCUMENTS

1,609,640	12/1926	Bell et al. .	
1,711,352	4/1929	Jeffreys .	
3,203,455	8/1965	Horahin .	
3,428,404	2/1969	Ciancio .	
3,749,084	7/1978	Cucchiara .	
4,073,293	2/1978	Philips et al. .	
4,485,824	12/1984	Koll .	
4,672,969	6/1987	Dew	606/16
4,692,140	9/1987	Olson .	
4,790,819	12/1988	Li et al. .	
4,801,263	1/1989	Clark .	
4,854,320	8/1989	Dew et al.	606/213
4,877,037	10/1989	Ko et al. .	
4,929,246	5/1990	Sinofsky	606/8
4,997,371	3/1991	Fischer .	
5,071,417	12/1991	Sinofsky	606/8
5,100,429	3/1992	Sinofsky	606/195
5,156,613	10/1992	Sawyer	606/213
5,207,670	5/1993	Sinofsky	606/9
5,222,939	6/1993	Tiefenbrun et al. .	
5,240,675	8/1993	Wilk et al.	606/15
5,254,113	10/1993	Wilk	606/213
5,310,407	5/1994	Casale	604/51

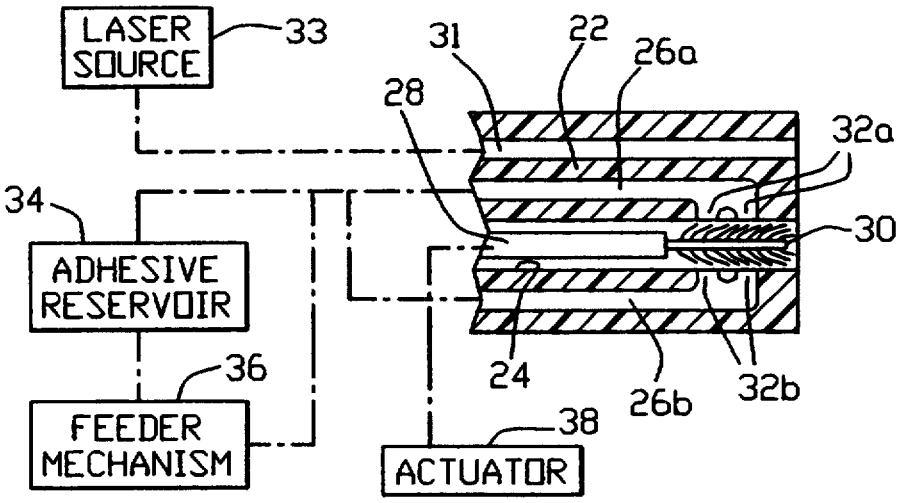
FOREIGN PATENT DOCUMENTS

395472	3/1909	France .
619625	10/1935	Germany .
1627186	2/1991	U.S.S.R. .

Primary Examiner—Ralph A. Lewis

Attorney, Agent, or Firm—R. Neil Sudol; Henry D. Coleman

[57] **ABSTRACT**

A laparoscopic instrument comprises an elongate shaft, an applicator component on the shaft for applying a biologically active composition to a tissue surface inside a patient during a laparoscopic procedure, and a fiber optic laser beam transmission guide extending along the shaft from a proximal end to a distal end of the shaft. A laser source is operatively connected to the fiber optic guide at the proximal end of the shaft for generating a laser beam for transmission through the guide upon application of the biologically active composition to the tissue surface during the laparoscopic procedure. The applicator component includes, at the distal end of the shaft, a roller or a flexible cup-shaped receptacle which stores a predetermined amount of the biologically active composition and which deforms in response to a pressing of the shaft, to deposit the biologically active composition onto the tissue surface.

18 Claims, 3 Drawing Sheets