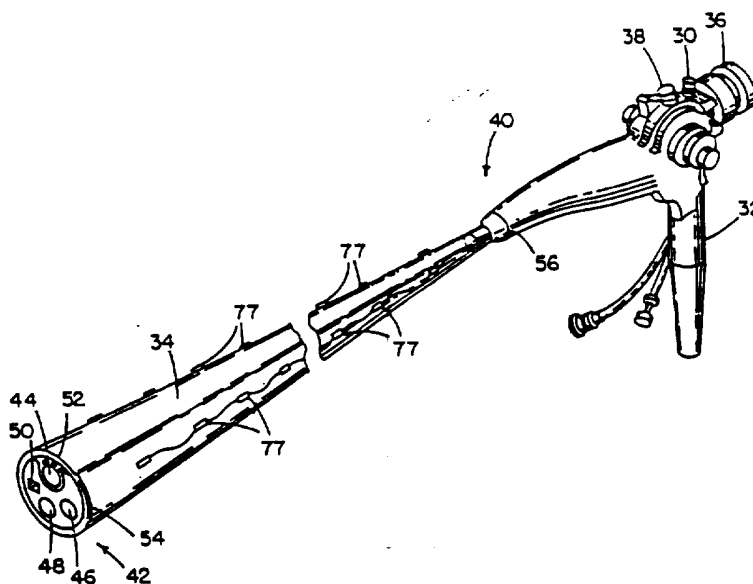




INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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(21) International Application Number: PCT/US91/02027 (22) International Filing Date: 26 March 1991 (26.03.91) (30) Priority data: 498,611 26 March 1990 (26.03.90) US (71) Applicant: OPIELAB, INC. [US/US]; V-M Ventures, Inc., 6 Strathmore Road, Natick, MA 01760 (US). (72) Inventors: SILVERSTEIN, Fred, E. ; 1246 15th Avenue East, Seattle, WA 98112 (US). OPIE, Eric, A. (deceased). (74) Agents: CARLSON, David, V. et al. ; Seed and Berry, 6300 Columbia Center, Seattle, WA 98104-7092 (US).		(81) Designated States: AT (European patent), BE (European patent), CH (European patent), DE (European patent), DK (European patent), ES (European patent), FR (European patent), GB (European patent), GR (European patent), IT (European patent), JP, LU (European patent), NL (European patent), SE (European patent). Published <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i> (88) Date of publication of the international search report: 14 November 1991 (14.11.91)

(54) Title: AN ENDOSCOPE WITH POTENTIAL CHANNELS AND METHOD OF USING THE SAME

**(57) Abstract**

An apparatus and method for providing an endoscope with a plurality of potential channels is disclosed. A tubing (54) having a radially flexible wall is positioned adjacent the endoscope insertion tube (34). The tubing (54) is collapsed prior to inserting the insertion tube (34) into the patient's body. After the insertion tube (34) is within the patient's body, the tubing (54) is expanded to create a channel. A medical apparatus may pass through the channel for performing a medical procedure. The tubing (54) is expanded by placing a tapered rod therethrough, by placing a fluid under pressure within the tubing (54), or by elevating a flat coiled wire into a cylindrical coil. A radially rigid tubing is placed within the expanded flexible tubing (54) to permit medical devices to extend from a position outside of the patient's body to the distal end of the insertion tube (34). A plurality of tubings (54) are provided circumferentially spaced from each other around the insertion tube (34) to permit a combination of medical devices to be used in cooperation with each other to perform a medical procedure. A stiffening member, such as a rod or fluid under pressure may extend partially along the length of the insertion tube (34) to vary the flexibility characteristics of the insertion tube (34) while it is within the patient's body.

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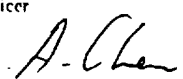
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INTERNATIONAL SEARCH REPORT

PCT/US 91/02027

International Application No

I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all) ⁶		
According to International Patent Classification (IPC) or to both National Classification and IPC Int.Cl. 5 A61B1/00		
II. FIELDS SEARCHED		
Minimum Documentation Searched ⁷		
Classification System	Classification Symbols	
Int.Cl. 5	A61B ; A61M	
Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched ⁸		
III. DOCUMENTS CONSIDERED TO BE RELEVANT ⁹		
Category ⁹	Citation of Document, ¹¹ with indication, where appropriate, of the relevant passages ¹²	Relevant to Claim No. ¹³
Y A	US,A,4721097 (D'AMELIO) 26 January 1988 see figures 1-4, 9-13 see column 9, line 15 - column 11, line 66 see column 12, line 24 - column 13, line 31	1, 22 3, 14, 15, 23
Y A	--- US,A,4406656 (HATTLER ET AL.) 27 September 1983 see figures see column 4, line 37 - column 8, line 28	1, 22 2, 4, 5, 7, 8, 14, 16, 17, 20, 24 26, 27
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IV. CERTIFICATION		
Date of the Actual Completion of the International Search	Date of Mailing of this International Search Report	
07 AUGUST 1991	16. 09. 91	
International Searching Authority	Signature of Authorized Officer	
EUROPEAN PATENT OFFICE	CHEN A. H. 	

III. DOCUMENTS CONSIDERED TO BE RELEVANT (CONTINUED FROM THE SECOND SHEET)		
Category °	Citation of Document, with indication, where appropriate, of the relevant passages	Relevant to Claim No.
A	US,A,4646722 (SILVERSTEIN ET AL.) 03 March 1987 see figures 7, 8 see column 8, line 29 (cited in the application) ---	1, 24

**ANNEX TO THE INTERNATIONAL SEARCH REPORT
ON INTERNATIONAL PATENT APPLICATION NO.**

US9102027
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07/08/91

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US-A-4406656	27-09-83	None	
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		EP-A, B 0184778	18-06-86
		JP-B- 2054734	22-11-90
		JP-A- 61179128	11-08-86