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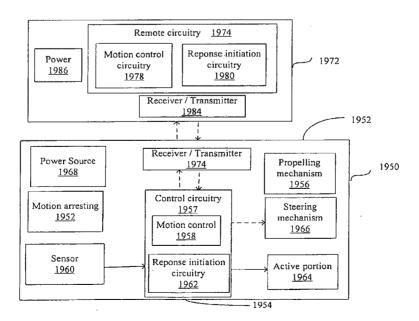
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[Continued on next page]

#### (54) Title: LUMEN-TRAVELING DEVICE



(57) Abstract: Lumen-traveling devices and associated methods and systems are described. Lumen-traveling devices capable of traveling within a body lumen may include a propelling mechanism to produce movement of the lumen-traveling device within the lumen, as well as additional components such as a sensor, an active portion, and/or control circuitry. In some embodiments, a sensor may be used to detect a local condition, and an action may be performed within the body lumen. Actions that may be performed include, but are not limited to, transmitting information, releasing a material within the lumen, performing a surgical step, or collecting a sample, among others.



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Documentation	on searched other than minimum documentation to the	extent that such documents are included in	the fields searched	
Electronic da	ta base consulted during the international search (name	of data base and, where practicable, search	terms used)	
C. DOCI	JMENTS CONSIDERED TO BE RELEVANT		•	
Category *	Citation of document, with indication, where ap	1	Relevant to claim No.	
X  Y	US 6,240,312 B1 (Alfano et al) 29 May 2001 (29.05. line 5 and column 5, lines 15-20.	2001), see column 3, line 64-column 4,	1,8-9,16,29,38- 51,55,57,61-63,65- 66,68-69 and 91-94	
	<b>!</b>		2-7.10-15.30-37.52- 54.56.58-60.64.67.70- 90 and 95-134	
Y Y	US 5,188,111 A (Yates et al) 23 February 1993 (23.0 line 15 and elements 14, 15 and 19. US 6,911,004 B2 (Kim et al) 28 June 2005 (28.06.20		2,10-15,17-22,30- 37,60,84-86 and 95 3-7	
. Y	US 6,958,034 B2 (Iddan) 05 October 2005 (05.10.20	05), see elements 24, 20 and 30.	23-28	
Further documents are listed in the continuation of Box C. See patent family annex.				
"A" document	Special categories of cited documents:  "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the particular relevance  "A" document defining the general state of the art which is not considered to be of particular relevance			
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Date of the actual completion of the international search  Date of mailing of the international search report				
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Mai Con P.O	il Stop PCT, Attn: ISA/US nmissioner for Patents . Box 1450 xandria, Virginia 22313-1450	Charles Marmor, II Telephone No. 571-272-3700	Healt	
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PCT/US07/10942

ategory *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 3,391,697 A (Greatbatch) 09 July 1968 (09.07.1968), see column 7, lines 12-20.	70-71
Y	US 2003/0151524 A1 (Clark) 14 August 2003 (14.08.2003), see Abstract.	72-75
<b>Y</b>	US 6,053,873 A (Govari et al) 25 April 2000 (25.04.2000), see column 4, lines 8-13 and column 10, line 8.	53,55,57,59,76,78-8 and 82
Y	US 5,702,432 A (Chen et al) 30 December 1997 (30.12.1997), see column 2, lines 27-48 and column 8, lines 38-50.	. 77
Y	US 6,711,423 B2 (Colvin, Jr) 23 March 2004 (23.03.2004), csee olumn 10, lines 58-65.	81
Y	US 6,824,508 B2 (Kim et al) 30 November 2004 (21.11.2002), see column 3, line 64-column 4, line 5 and Abstract.	64,67,83,87-90 an 125-126
Y	US 5,398,670 A (Ortiz et al) 21 March 1995 (21.03.1995), see column 4, line 52-column 5, line 3 and Figs. 7A-7E.	52,54,56,58 and 12 134
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