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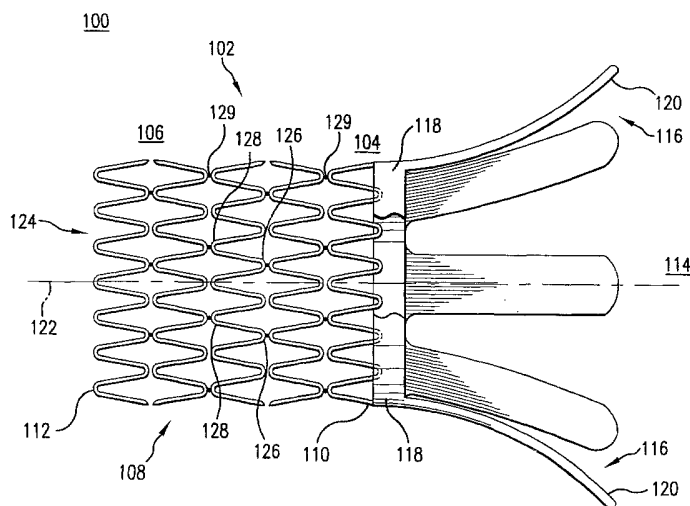
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(54) Title: OSTIUM STENT SYSTEM



(57) **Abstract:** An ostium stent system (100) includes a stent (102) having a tubular body (108) at the distal portion (106) of the stent and a flaring portion at the proximal portion (114) of the stent. A restraining structure that deploys the flaring portion covers only the proximal portion of the stent, providing a low profile for smooth delivery of the stent to the treatment site. The flaring portion comprises at least one flaring member (116) which each comprise a short segment (118) and a long segment (120). In an unexpanded configuration, each short and long segment are parallel to a longitudinal axis (122) of the tubular body. When the flaring portion is deployed, each short segment remains parallel while each long segment becomes perpendicular to the longitudinal axis of the tubular body. The short segments therefore absorb the radial force resulting from deployment of the long segments and thereby prevent the stent from lifting off the balloon (330).



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A61F2/06

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 03/063729 A (ORBUS MEDICAL TECHNOLOGIES INC) 7 August 2003 (2003-08-07)	1,2,5-8, 11,13, 16-19, 22,24, 25, 28-30,33
Y	the whole document -----	23,34
X	WO 95/32757 A (NITINOL MEDICAL TECHNOLOGIES, INC) 7 December 1995 (1995-12-07)	1,2,6,7, 11,12
Y	figure 11 -----	23,34
X	US 5 607 444 A (LAM ET AL) 4 March 1997 (1997-03-04) cited in the application	13,17, 18,22, 24,25, 28,29,33
	the whole document -----	
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2002/133218 A1 (VRBA ANTHONY C) 19 September 2002 (2002-09-19) the whole document	13,17, 18,22, 24,25, 29,33
A	US 2002/091434 A1 (CHAMBERS JEFFREY W) 11 July 2002 (2002-07-11) the whole document	1-34
P,X	US 2004/181272 A1 (CHAMBERS JEFFREY W) 16 September 2004 (2004-09-16) the whole document	1,2,6-8, 11,13, 17-19, 22,24, 25,29, 30,33
P,X	US 2004/254627 A1 (THOMPSON PAUL J ET AL) 16 December 2004 (2004-12-16) the whole document	1,6-8,11

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US2005/000457

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 03063729	A	07-08-2003	EP 1469794 A2 JP 2005515829 T WO 03063729 A2 US 2004093058 A1	27-10-2004 02-06-2005 07-08-2003 13-05-2004
WO 9532757	A	07-12-1995	US 5540712 A CA 2191307 A1 EP 0788390 A1 JP 10504200 T WO 9532757 A1 US 5746765 A US 5902317 A	30-07-1996 07-12-1995 13-08-1997 28-04-1998 07-12-1995 05-05-1998 11-05-1999
US 5607444	A	04-03-1997	US 5868777 A	09-02-1999
US 2002133218	A1	19-09-2002	US 6409755 B1 US 6168621 B1 US 2004176835 A1 AT 278365 T CA 2326882 A1 DE 69920905 D1 EP 1079768 A1 JP 2002516143 T WO 9960953 A1	25-06-2002 02-01-2001 09-09-2004 15-10-2004 02-12-1999 11-11-2004 07-03-2001 04-06-2002 02-12-1999
US 2002091434	A1	11-07-2002	US 2004181272 A1	16-09-2004
US 2004181272	A1	16-09-2004	US 2002091434 A1	11-07-2002
US 2004254627	A1	16-12-2004	NONE	