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(12) United States Patent

Root et al.

(54) COAXIAL GUIDE CATHETER FOR INTERVENTIONAL CARDIOLOGY PROCEDURES

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See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,813,930	А		3/1989	Elliott	
4,832,028	Α		5/1989	Patel	
4,932,413	Α		6/1990	Shockey et al.	
5,098,412	Α		3/1992	Shiu	
5,122,125	Α		6/1992	Deuss	
5,472,425	А		12/1995	Teirstein	
5,658,263	Α		8/1997	Dang et al.	
5,776,141	А	*	7/1998	Klein et al.	623/1.11

(10) Patent No.: US 8,048,032 B2

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6,159,195	Α	12/2000	Ha et al.
6,338,725	B1 *	1/2002	Hermann et al 604/95.04
6,475,195	B1	11/2002	Voda
6,595,952	B2	7/2003	Forsberg
6,610,068	B1	8/2003	Yang
6,638,268	B2 *	10/2003	Niazi 604/528
6,689,144	B2	2/2004	Gerberding
6,706,018	B2	3/2004	Westlund et al.
6,755,812	B2	6/2004	Peterson et al.
6,860,876	B2	3/2005	Chen
7,697,996	B2	4/2010	Manning et al.
7,717,899	B2	5/2010	Bowe et al.
2003/0195546	A1*	10/2003	Solar et al 606/192
2004/0127927	A1*	7/2004	Adams 606/170
2005/0004523	A1	1/2005	Osborne et al.
2005/0182437	A1	8/2005	Bonnette et al.
2007/0260219	A1	11/2007	Root et al.

OTHER PUBLICATIONS

Takahashi, New Method to Increase a Backup Support of a 6 French Guiding Coronary Catheter, Catheterization and Cardiovascular Interventions 63:452-456 (2004), 5 pages, published online in Wiley InterScience (www.interscience.wiley.com).

Office Action for U.S. Appl. No. 12/824,734; filed Jun. 28, 2010, Inventors Roots et al.; Office Action dated Aug. 1, 2011.

* cited by examiner

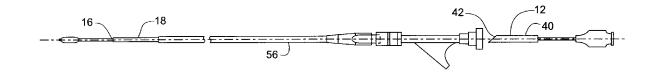
Primary Examiner — Jackie Ho

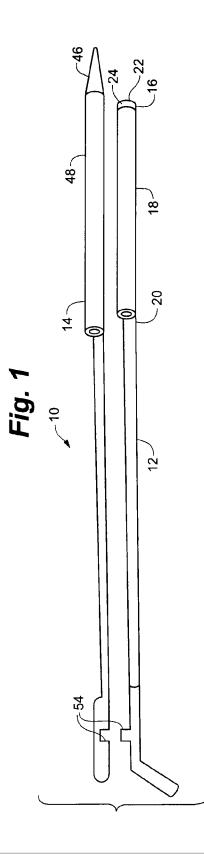
Assistant Examiner — Bradley Osinski (74) Attorney, Agent, or Firm — Patterson Thuente IP

(57) **ABSTRACT**

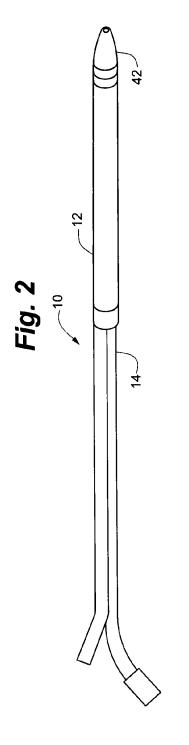
A coaxial guide catheter to be passed through guide catheter having a first lumen, for use with interventional cardiology devices that are insertable into a branch artery that branches off from a main artery. The coaxial guide catheter is extended through the lumen of the guide catheter and beyond the distal end of the guide catheter and inserted into the branch artery. The device assists in resisting axial and shear forces exerted by an interventional cardiology device passed through the second lumen and beyond the flexible distal tip portion that would otherwise tend to dislodge the guide catheter from the branch artery.

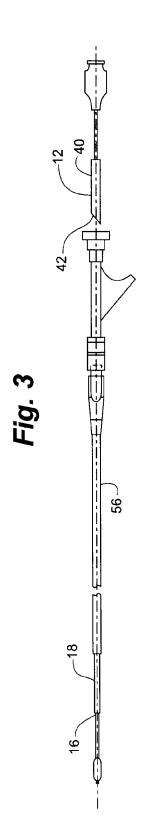
22 Claims, 13 Drawing Sheets





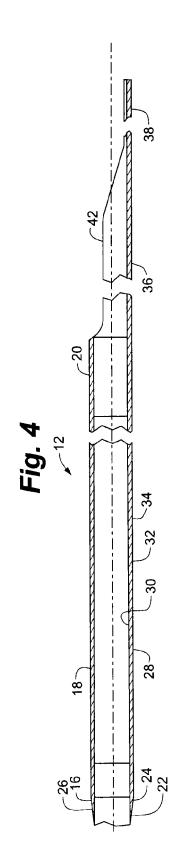
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