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United States Patent [19]

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Kontos

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- [54] **SUPPORT CATHETER ASSEMBLY**
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- [73] Assignee: **Boston Scientific Corporation**, Watertown, Mass.
- [21] Appl. No.: **267,037**
- [22] Filed: **Jun. 27, 1994**

5,143,093 9/1992 Sahota .
 5,147,377 9/1992 Sahota .
 (List continued on next page.)

FOREIGN PATENT DOCUMENTS

WO92/07606 5/1992 .
 WO92/07610 5/1992 WIPO .

OTHER PUBLICATIONS

Matthew L. Carr, "The Use of the Guiding Catheter in Coronary Angioplasty: The Technique of Manipulating Catheters to . . . Tight Coronary Stenoses," *Catheterization and Cardiovascular Diagnosis*, 12:189-197 (1986).
 J. F. Reidy et al., "Transcatheter Occlusion of Coronary to Bronchial Anastomosis by Detachable Balloon Combined with Coronary Angioplasty at Same Procedure," *Br. Heart J.*, 49:284-7, 1983.
 Little, "Probe Angioplasty of Total Coronary Occlusion Using an Intracoronary Probing Catheter TM", *Catheterization and Cardiovascular Diagnosis*, 17:218-223 (1989).

Related U.S. Application Data

- [63] Continuation of Ser. No. 925,864, Aug. 7, 1992, abandoned.
- [51] Int. Cl.⁶ **A61M 29/00**
- [52] U.S. Cl. **604/96; 604/53; 604/95; 606/194**
- [58] Field of Search **604/96, 95, 53, 280, 604/281, 282, 283, 101-104; 606/191-194**

References Cited

U.S. PATENT DOCUMENTS

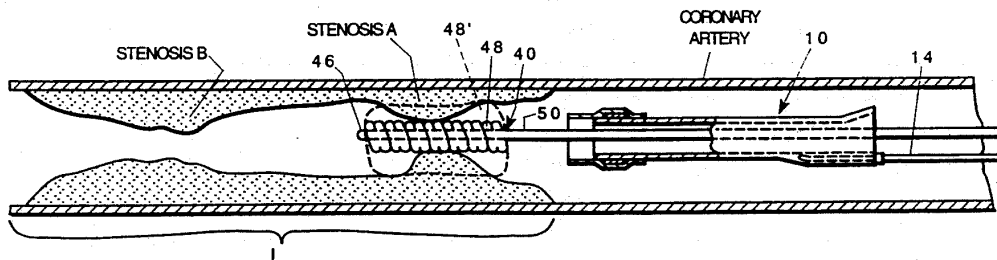
- 3,605,750 9/1971 Sheridan et al. .
- 4,183,102 1/1980 Guiset .
- 4,279,252 7/1981 Martin .
- 4,503,569 3/1985 Dotter .
- 4,509,523 4/1985 Pevsner .
- 4,581,017 4/1986 Sahota .
- 4,616,652 10/1986 Simpson .
- 4,762,129 8/1988 Bonzel .
- 4,820,271 4/1989 Deutsch .
- 4,824,435 4/1989 Giesy et al. .
- 4,893,623 1/1990 Rosenbluth .
- 4,909,252 3/1990 Goldberger .
- 4,947,864 8/1990 Shockey et al. .
- 4,976,691 12/1990 Sahota .
- 4,983,167 1/1991 Sahota .
- 4,988,356 1/1991 Crittenden et al. .
- 5,000,734 3/1991 Boussignac et al. .
- 5,000,743 3/1991 Patel .
- 5,002,531 3/1991 Bonzel .
- 5,019,042 5/1991 Sahota .
- 5,035,686 7/1991 Crittenden et al. .
- 5,040,548 8/1991 Yock .
- 5,061,273 10/1991 Yock .
- 5,090,958 2/1992 Sahota .
- 5,108,370 4/1992 Walinsky .
- 5,131,407 7/1992 Ischinger et al. .

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 Attorney, Agent, or Firm—Fish & Richardson

[57] ABSTRACT

A support catheter assembly for facilitating medical procedures includes a tubular body and a continuous lumen from its proximal end to its distal end. A manipulating member is connected to the tubular body for inserting, advancing, withdrawing and maneuvering the body during a medical procedure. The manipulating member may be a wire or a manipulating tube. The tubular body also may be provided with a funnel shaped lumen opening at its proximal end to facilitate insertion of devices therethrough, and radiopaque markers for subcutaneously detecting the location of the device during a medical procedure and, more particularly, for detecting its location relative to other devices used in the medical procedure. A method also is disclosed for using the tube assembly to facilitate insertion of a PTCA catheter into a stenotic region and for holding open the lumen through that region after angioplasty has been performed.

33 Claims, 6 Drawing Sheets



U.S. PATENT DOCUMENTS

5,160,321	11/1992	Sahota .	5,226,888	7/1993	Arney .
5,163,903	11/1992	Crittenden et al. .	5,234,407	8/1993	Teirstein et al. .
5,181,911	1/1993	Shturman .	5,255,690	10/1993	Keith et al. .
5,183,464	2/1993	Dubrul et al. .	5,263,932	11/1993	Jang .
5,190,058	3/1993	Jones et al. .	5,267,958	12/1993	Buchbinder et al. .
5,192,307	3/1993	Wall .	5,290,247	3/1994	Crittenden .
			5,299,575	4/1994	Sandridge .
			5,342,297	8/1994	Jang .

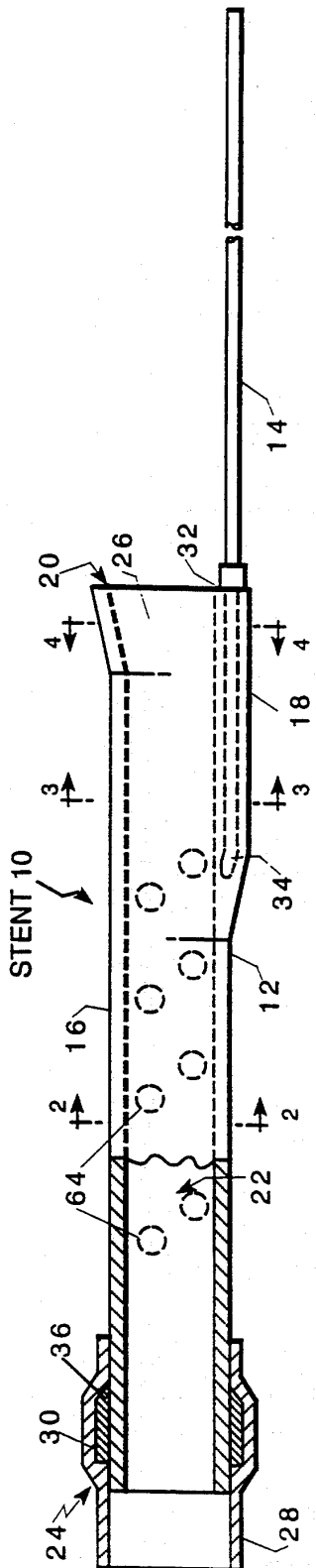


FIG. 1

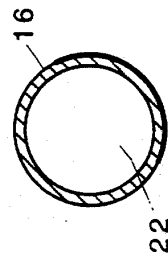


FIG. 2

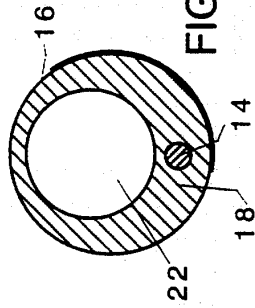


FIG. 3

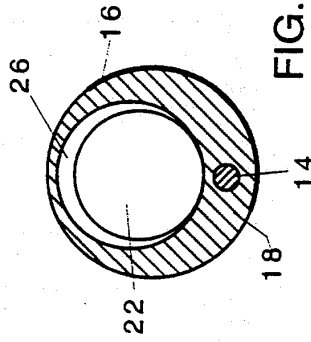


FIG. 4

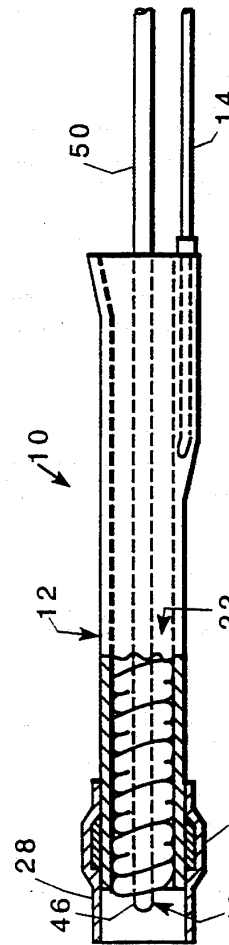
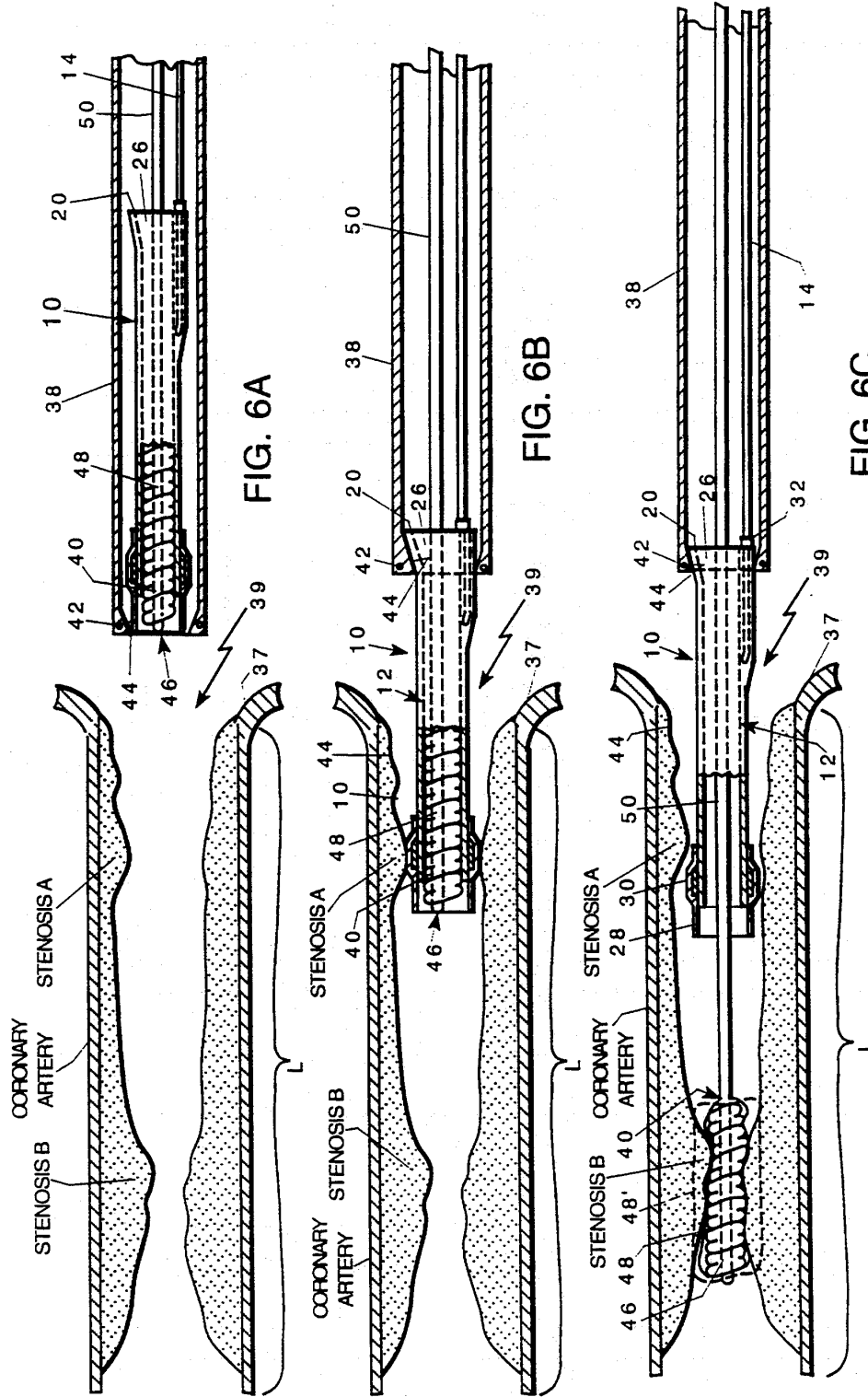


FIG. 5



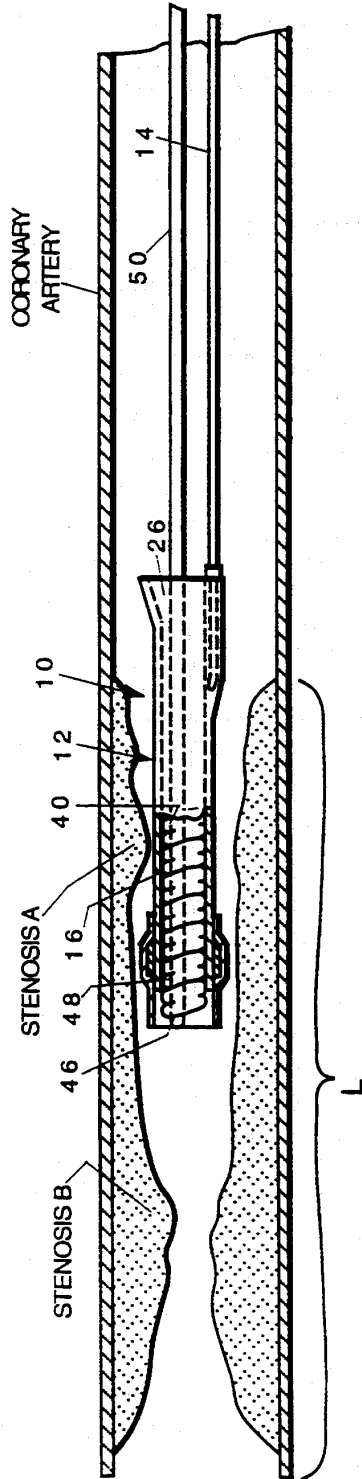


FIG. 9

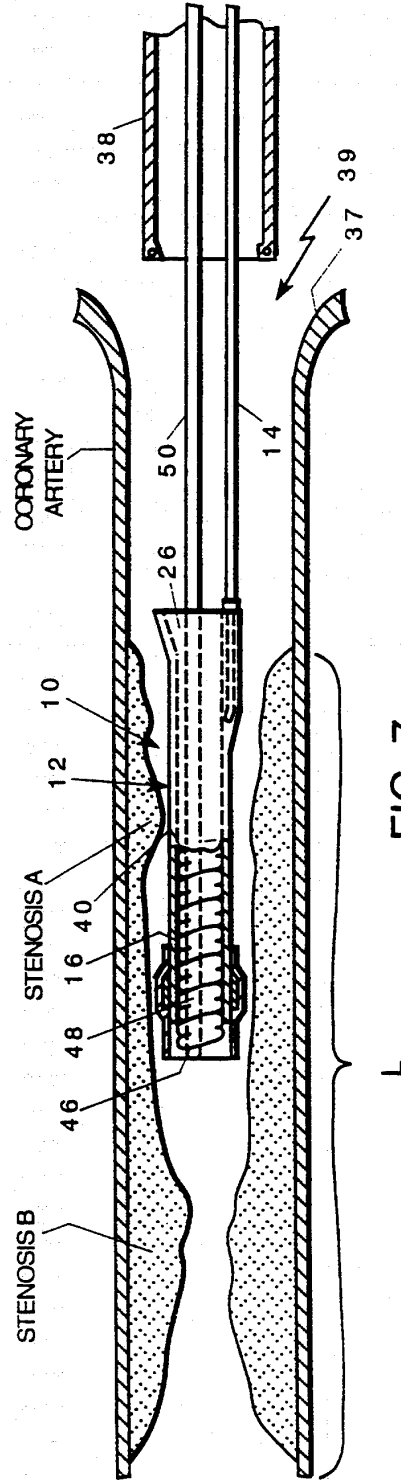


FIG. 7

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