



US005980486A

**United States Patent** [19]  
**Enger**

[11] **Patent Number:** **5,980,486**  
[45] **Date of Patent:** **Nov. 9, 1999**

- [54] **RAPIDLY EXCHANGEABLE CORONARY CATHETER**
- [75] Inventor: **Christine D. Enger**, Tenafly, N.J.
- [73] Assignee: **Arterial Vascular Engineering, Inc.**, Santa Rosa, Calif.
- [21] Appl. No.: **08/095,036**
- [22] Filed: **Jul. 20, 1993**

**Related U.S. Application Data**

- [63] Continuation of application No. 07/999,589, Dec. 30, 1992, abandoned, which is a continuation of application No. 07/759,107, Sep. 6, 1991, abandoned, which is a continuation of application No. 07/618,531, Nov. 26, 1990, abandoned, which is a continuation of application No. 07/303,803, Jan. 30, 1989, abandoned.
- [51] **Int. Cl.<sup>6</sup>** ..... **A61M 29/00**
- [52] **U.S. Cl.** ..... **604/102; 604/96; 606/194**
- [58] **Field of Search** ..... 604/96-103, 51, 604/54, 164, 171; 606/192, 194

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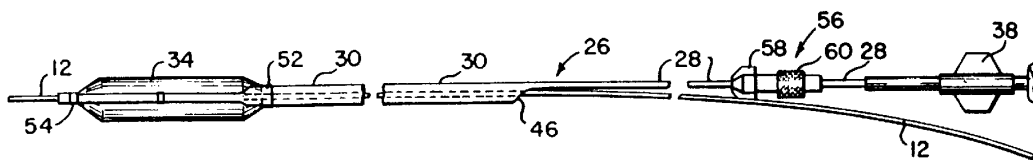
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[57] **ABSTRACT**

A rapidly exchangeable catheter for use in the coronary arteries includes an elongate relatively stiff proximal segment that defines an inflation lumen, an intermediate, shorter segment formed from a more flexible plastic material and having two lumens, and a third, single lumen distal segment. A balloon or other instrumentality adapted to operate in a coronary artery is mounted to the distal region of the catheter. The intermediate and distal segments include a guidewire lumen by which the catheter may be advanced along a guidewire. The proximal segment may include an inflation lumen when the operating instrumentality at the distal end of the catheter is a balloon. The intermediate and distal segments of the catheter are of a length of between about 35 to 45 cm such that when the catheter is advanced into the most remote distal portions of the coronary anatomy, the flexible plastic intermediate and distal segments will extend over the aortic arch of the patient thereby containing the guidewire over the aortic arch and maintaining the juncture of the relatively stiff proximal segment and the more flexible intermediate segment proximally of the aortic arch. The relatively stiff proximal section thus extends generally along a straight line from the femoral artery into the descending aorta but not so far as into the aortic arch. Buckling of the catheter is avoided so that the catheter is more easily manipulated.

**28 Claims, 3 Drawing Sheets**



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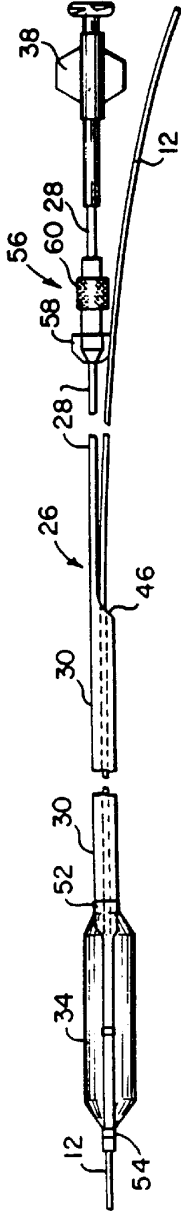


Fig. 1

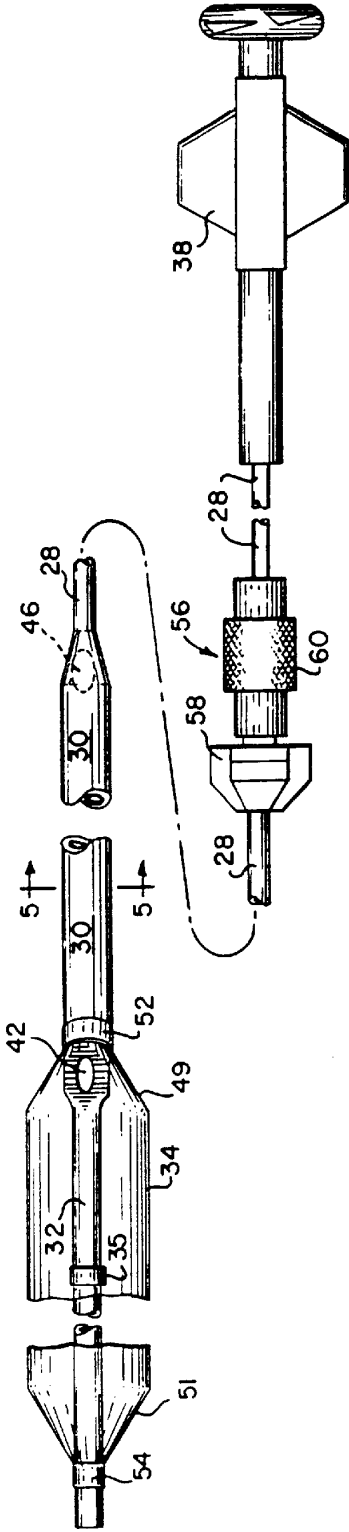


Fig. 2

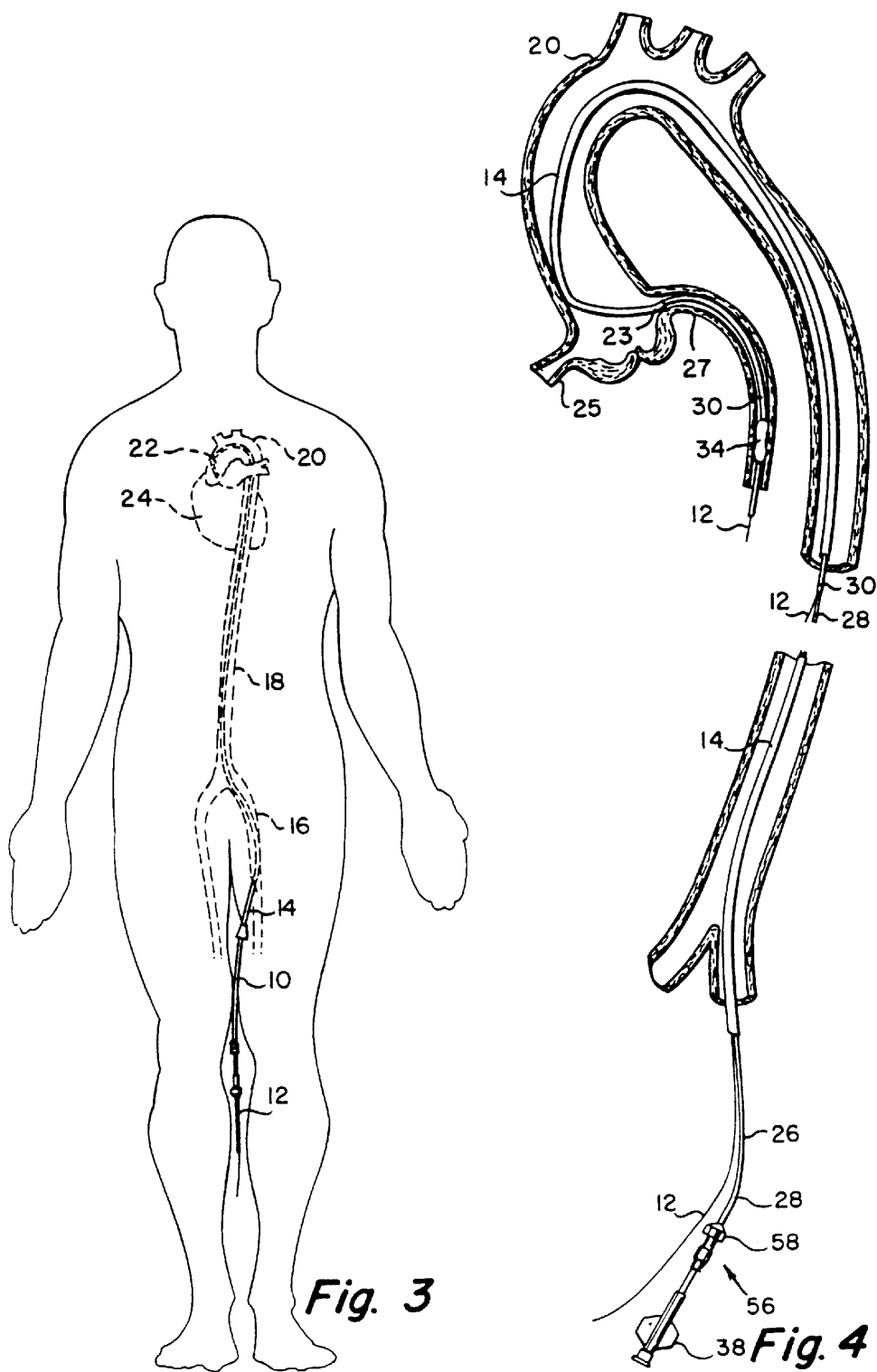


Fig. 3

Fig. 4

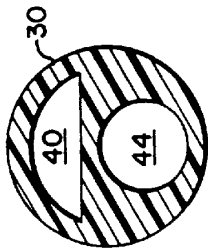


Fig. 5

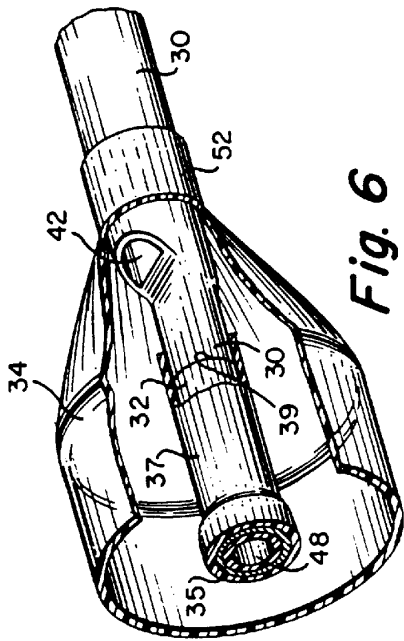


Fig. 6

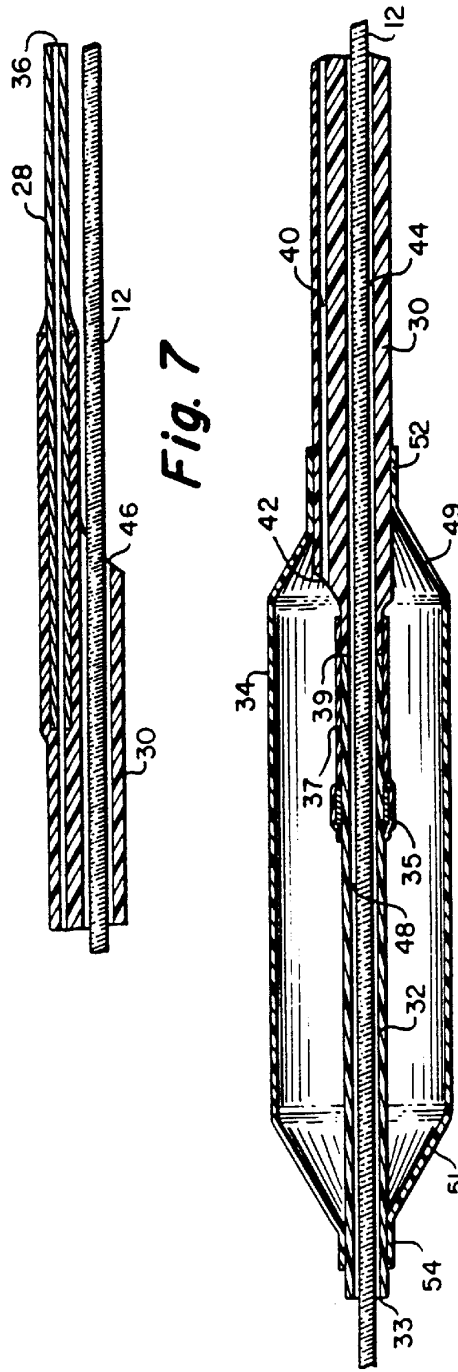


Fig. 7

Fig. 8

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