



US005290247A

United States Patent [19]
Crittenden

[11] **Patent Number:** 5,290,247
[45] **Date of Patent:** Mar. 1, 1994

- [54] **INTRACORONARY EXCHANGE APPARATUS AND METHOD**
- [75] **Inventor:** James F. Crittenden, Hollis, N.H.
- [73] **Assignee:** C. R. Bard, Inc., Murray Hill, N.J.
- [21] **Appl. No.:** 703,603
- [22] **Filed:** May 21, 1991
- [51] **Int. Cl.⁵** A61M 5/00
- [52] **U.S. Cl.** 604/171; 604/96
- [58] **Field of Search** 604/171, 164, 170, 96, 604/264, 280, 158, 159, 102

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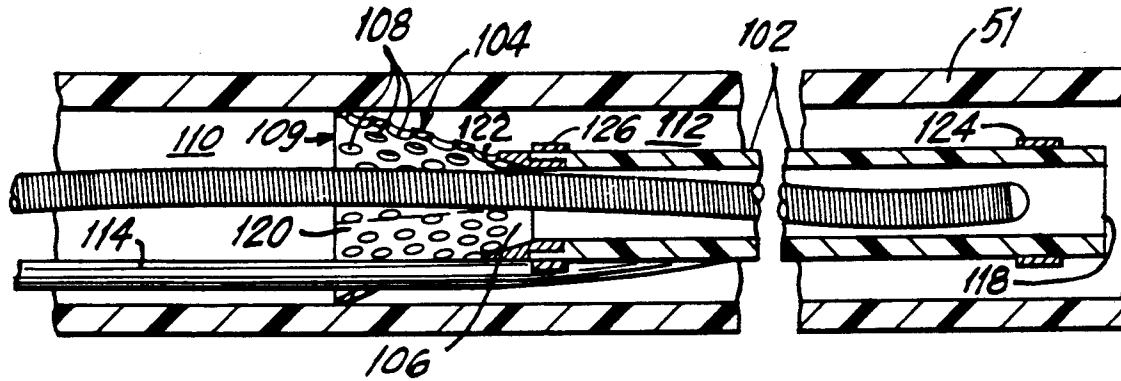
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Assistant Examiner—Jeffrey A. Smith
Attorney, Agent, or Firm—Morgan & Finnegan

[57] **ABSTRACT**

An intracoronary sheath for use in catheter exchanges

has an elongate tubular body with a proximally facing funnel at the proximal end of the sheath. A proximally extending wire for manipulating the sheath is attached to the proximal end of the sheath. The intracoronary sheath is advanced by manipulation of the wire over a first catheter positioned in a guide catheter and extends beyond the distal end of the guide catheter into the patient's vascular system. After the first catheter is removed, a second catheter advanced through a guide catheter is guided by the funnel into the intracoronary sheath and through the vascular system to a desired position in the patient's body. A second embodiment provides for the exchange of a second guidewire for a first guidewire. A first guidewire is positioned within a monorail-type catheter extending into the patient's vascular system. The monorail type catheter is provided with a proximally facing funnel on a proximally facing opening leading into the lumen of the monorail catheter which receives the guidewire. After the first guidewire is removed, the second guidewire introduced. The funnel guides the guidewire into the proximally facing opening and then into the guidewire lumen of the monorail-type catheter.

28 Claims, 7 Drawing Sheets



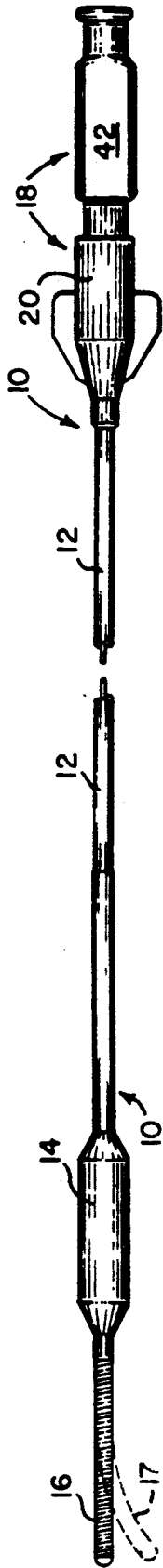


Fig. 1

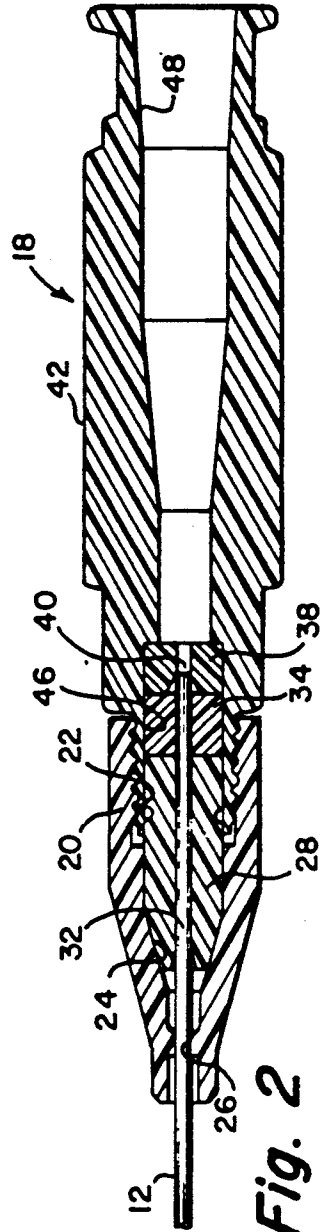


Fig. 2

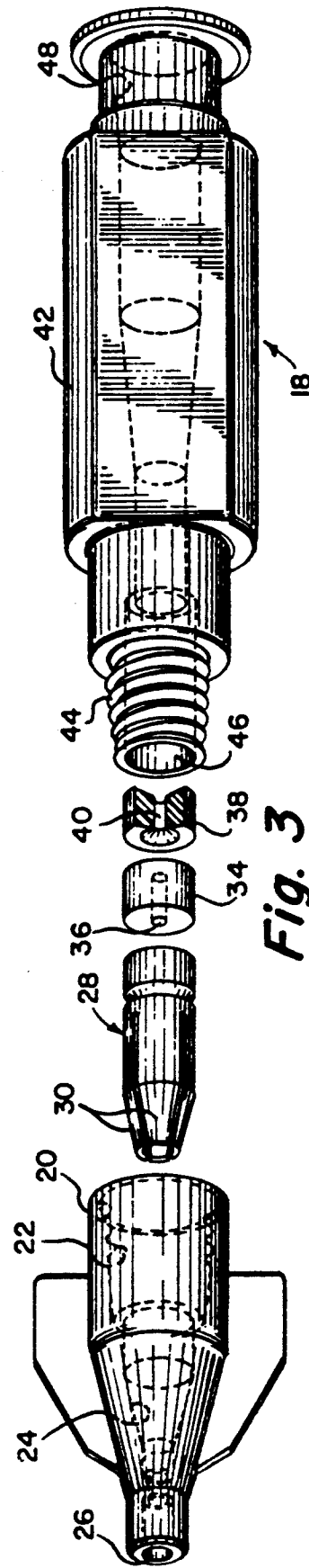


Fig. 3

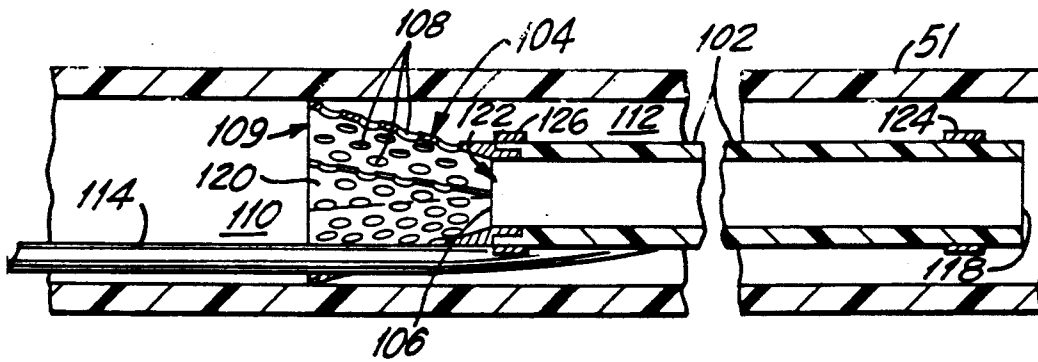


FIG. 4A

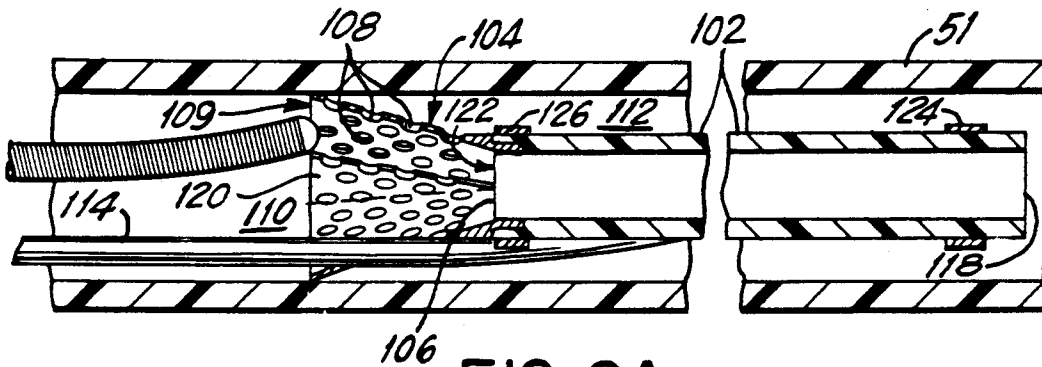


FIG. 8A

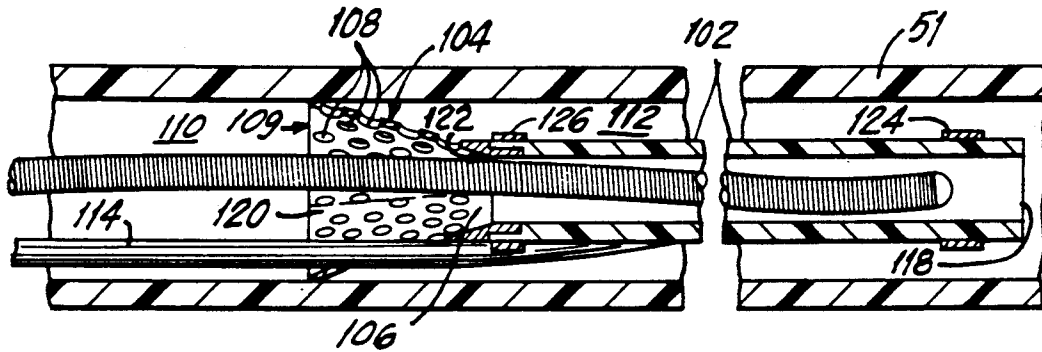


FIG. 8B

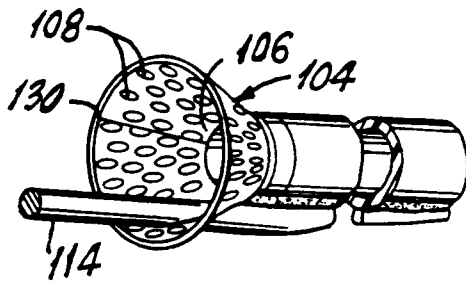


FIG. 9A

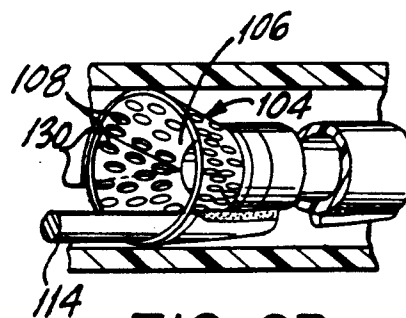


FIG. 9B

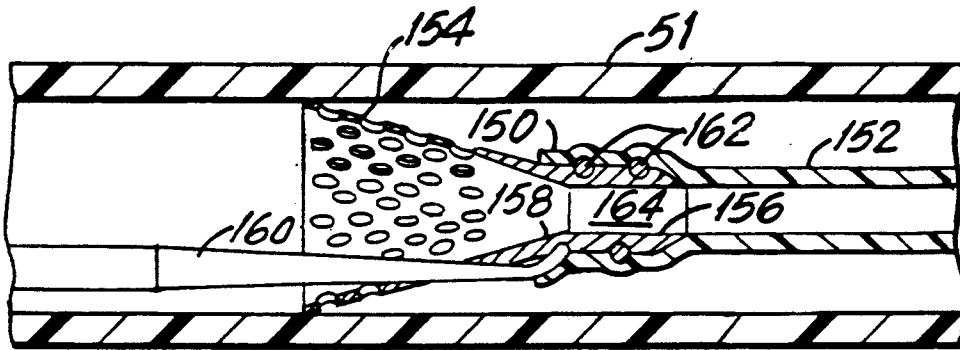


FIG. 4B

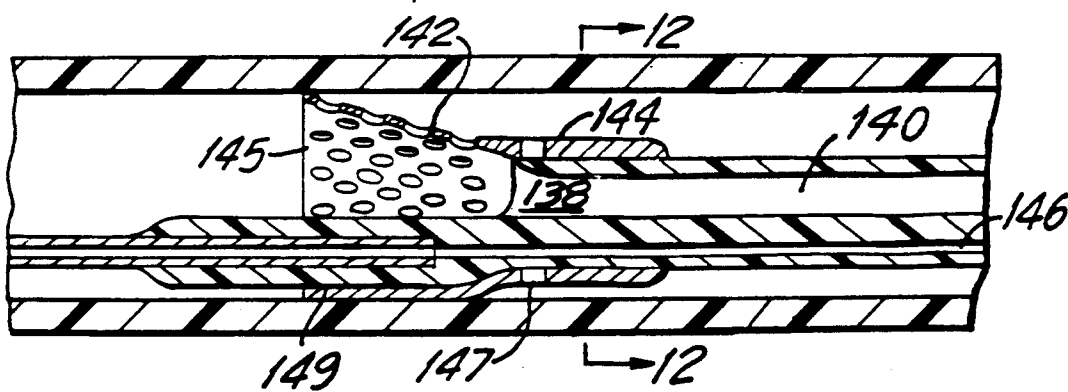


FIG. 11

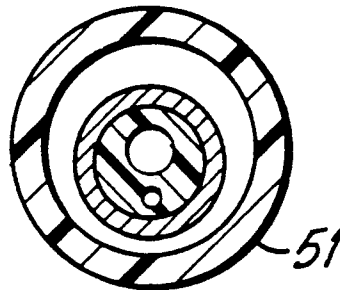


FIG. 12

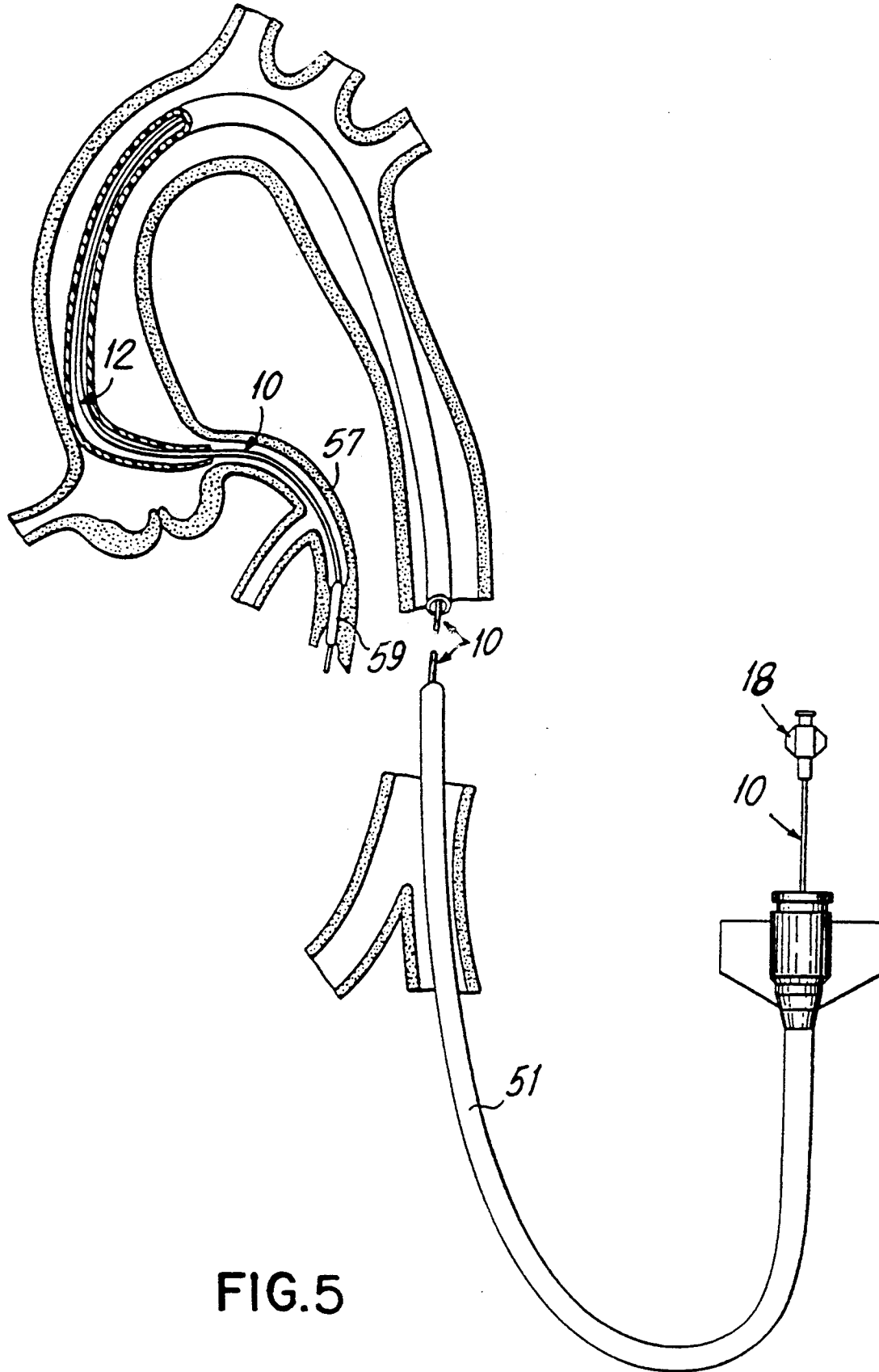


FIG. 5

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