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Crittenden

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- [54] INTRACORONARY EXCHANGE APPARATUS AND METHOD
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- [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

[56] **References Cited**
U.S. PATENT DOCUMENTS

4,431,426	2/1984	Groshong et al.	604/164 X
4,606,347	8/1986	Fogarty et al.	604/102 X
4,762,129	8/1988	Bonzel	604/96
4,917,088	4/1990	Crittenden	604/194
5,035,686	7/1991	Crittenden	604/96
5,041,085	8/1991	Osborne et al.	604/171 X
5,147,335	9/1992	Wright	604/264 X

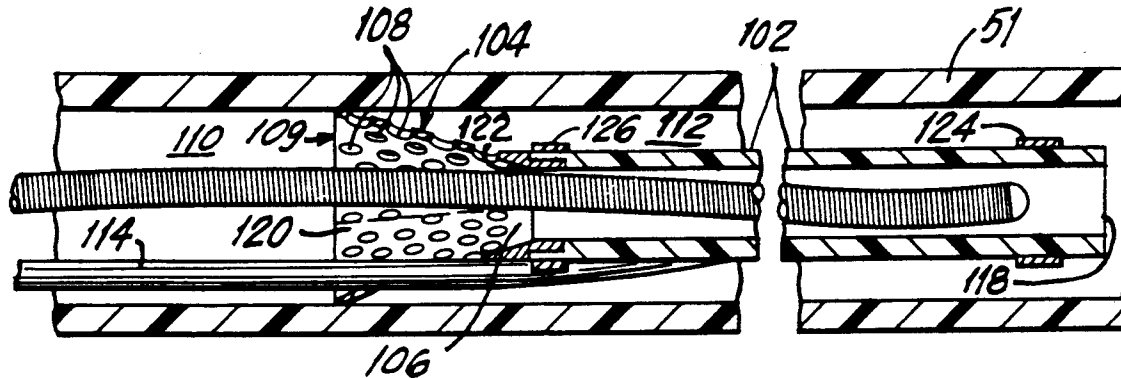
Primary Examiner—Gene Mancene
 Assistant Examiner—Jeffrey A. Smith
 Attorney, Agent, or Firm—Morgan & Finnegan

[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



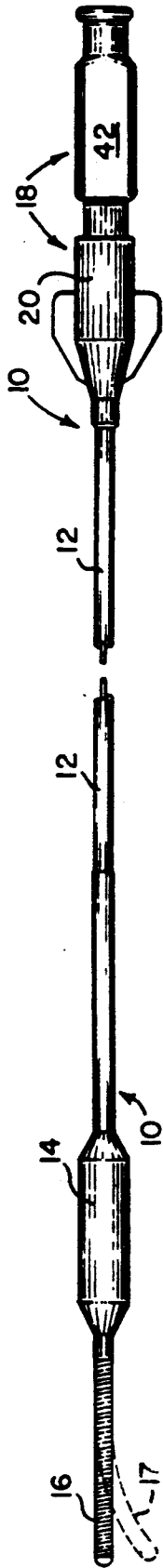


Fig. 1

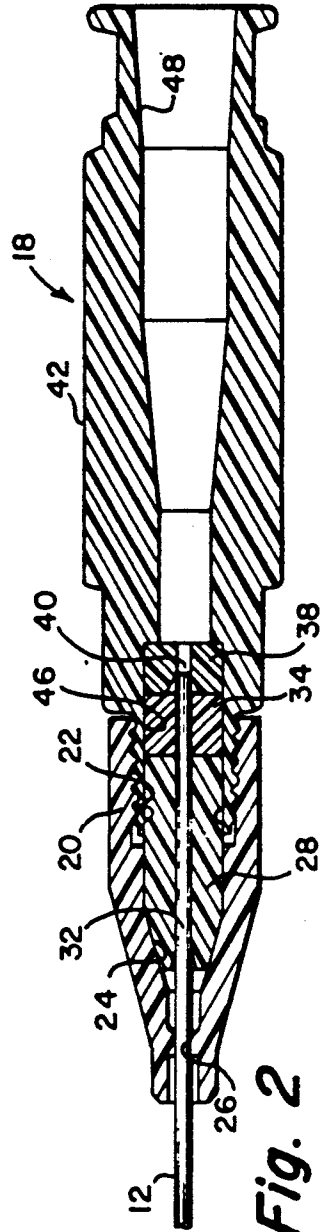


Fig. 2

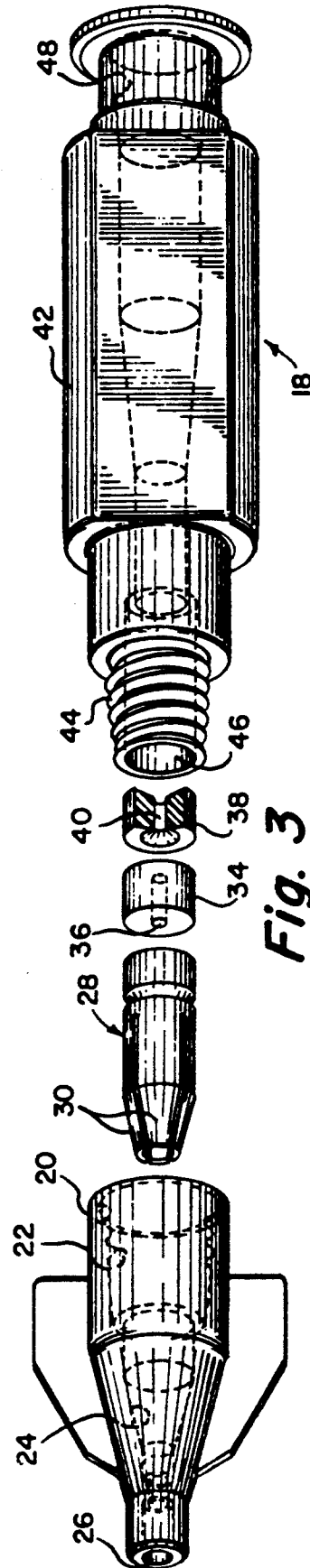


Fig. 3

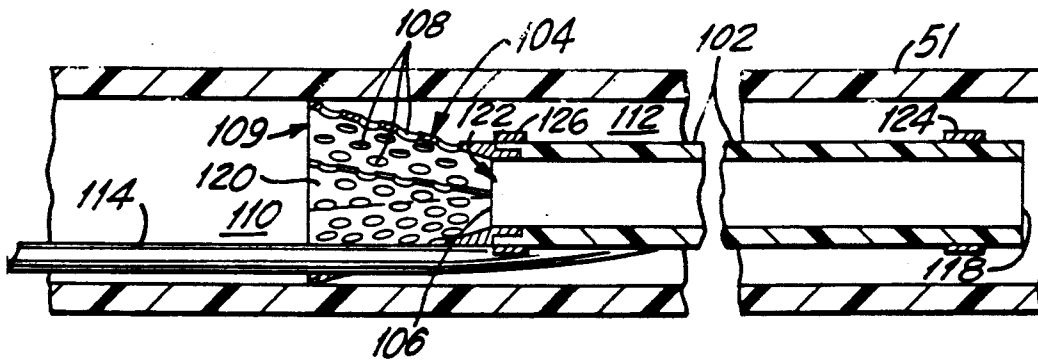


FIG. 4A

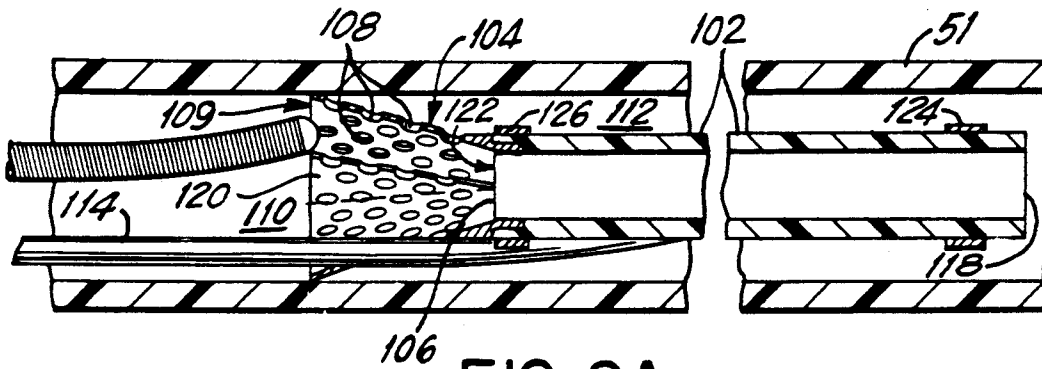


FIG. 8A

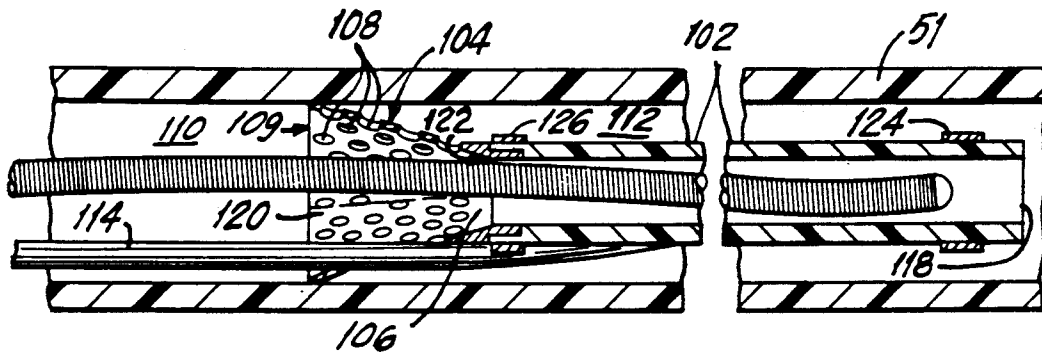


FIG. 8B

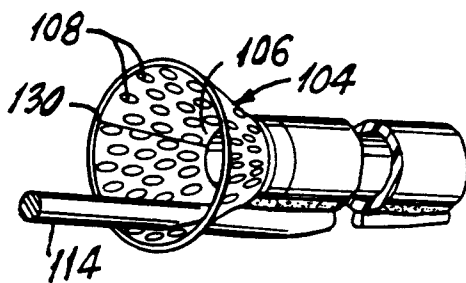


FIG. 9A

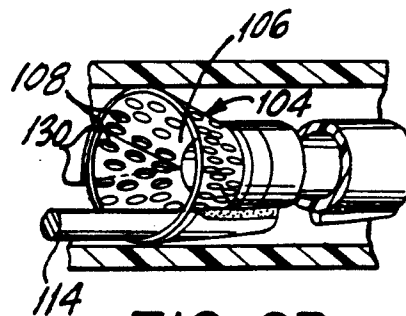


FIG. 9B

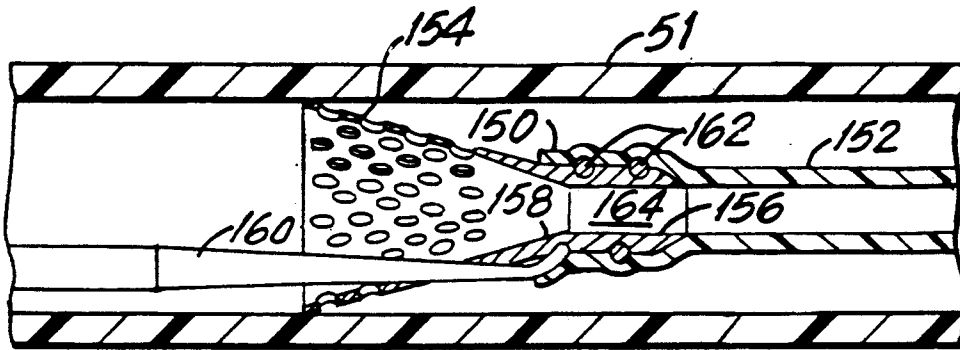


FIG. 4B

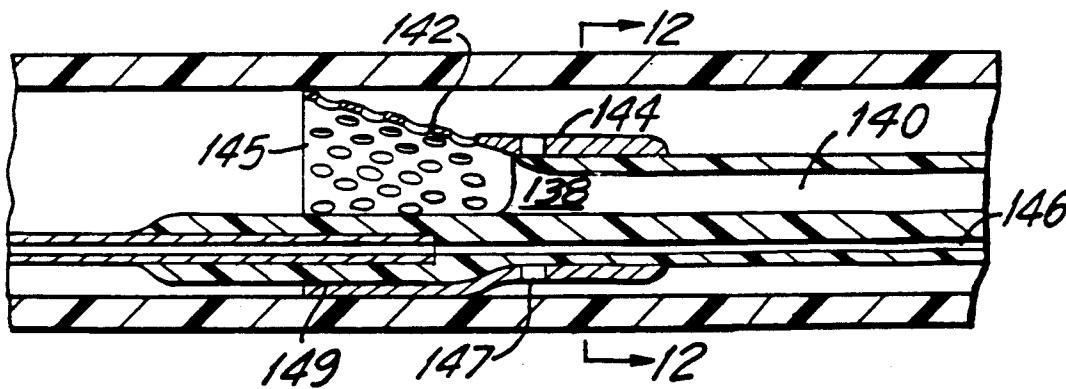


FIG. 11

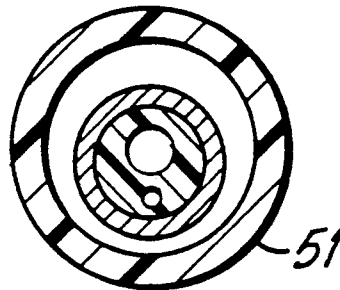


FIG. 12

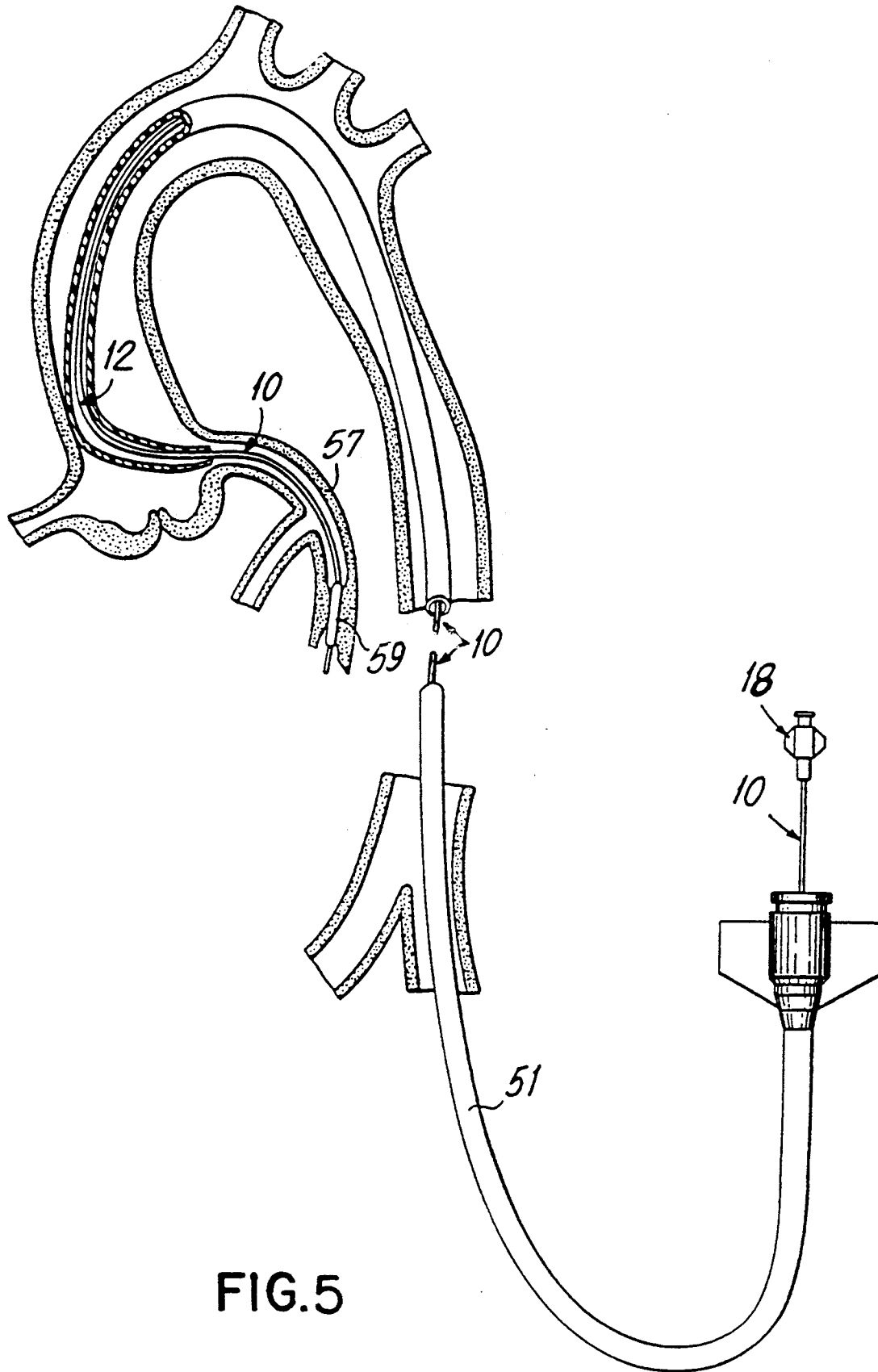


FIG.5

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