

- [54] **ANGIOPLASTY DILATING GUIDE WIRE**
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Related U.S. Application Data

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 [52] **U.S. Cl.** **128/344; 604/95; 604/96**
 [58] **Field of Search** **604/95, 104, 105, 106, 604/107, 108, 109, 101, 96; 128/343-344, 657, 772**

[57] **ABSTRACT**

A dilating guide wire for use in percutaneous transluminal angioplasty (PTCA) has a very small outside diameter which permits it to be used with a PTCA catheter for treatment of tight stenoses in the coronary arteries that cannot be treated by conventional PTCA catheters alone. The dilating guide wire is small enough to pass through the through lumen of the PTCA catheter and extend beyond the distal tip thereof for predilating the stenosis to permit subsequent crossing and dilation by the PTCA catheter. Means may be provided for selectively imparting an axial force to the balloon of the dilating guide wire to cause axial stretching thereof, thereby reducing its profile and facilitating withdrawal of the balloon of the dilating guide wire back into the PTCA catheter. This may be accomplished through manual actuation of a control knob attached to the core, or in another embodiment, automatically through permitted limited movement of the core relative to the outer tubing of the dilating guide wire as the control manifold is moved forward or backward. According to one form of the invention, the dilating guide wire has a hollow core communicating to a small opening to the balloon area at the distal end, and venting to the atmosphere at the proximal end of the dilating guide wire, to serve as a vent for air displaced from the balloon as it is inflated with inflation fluid. The small dimensions of the vent result in self-sealing with respect to the inflation fluid.

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26 Claims, 8 Drawing Sheets

