

United States Patent [19]

Rupp et al.

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[45] **Date of Patent:** Aug. 5, 1997

[54] **THICKENED INNER LUMEN FOR UNIFORM STENT EXPANSION AND METHOD OF MAKING**

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Primary Examiner—Corrine M. McDermott
Assistant Examiner—Cris L. Rodriguez
Attorney, Agent, or Firm—Dianne M. F. Plunkett; Harold R. Patton

[76] **Inventors:** **Garry Eugene Rupp**, 10777-B Andrea Ter., Santee, Calif. 92071; **Randell L. Werneth**, 11315 Affinity Ct., #145, San Diego, Calif. 92131; **Perfecta P. Tilos**, 8277 Calle Pino, San Diego, Calif. 92126

[57] **ABSTRACT**

An intravascular catheter system for implanting a radially expandable stent within a body vessel including a catheter comprising an inner lumen tube, an inflation lumen tube, an inflatable balloon and at least one free standing built-up layer affixed to the outer diameter of the inner lumen tube, the built-up layer being internal to the balloon. A stent is mounted coaxially upon the balloon, the built-up layer extends coaxially within the stent but does not extend beyond the proximal and distal ends of the stent. The built-up layer is sufficiently thick as to cause the balloon to expand evenly and the stent to deploy uniformly. The method of manufacturing the built-up layer includes forming the layer from shrink wrap tubing or alternatively forming the layer from molded ultraviolet light curing adhesive.

[21] Appl. No.: 637,959

[22] Filed: Apr. 25, 1996

[51] Int. Cl.⁶ A61M 29/00

[52] U.S. Cl. 604/96; 606/194

[58] **Field of Search** 604/96, 103, 171, 604/280, 282, 273, 104; 128/658; 606/192, 194, 195, 108

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17 Claims, 5 Drawing Sheets

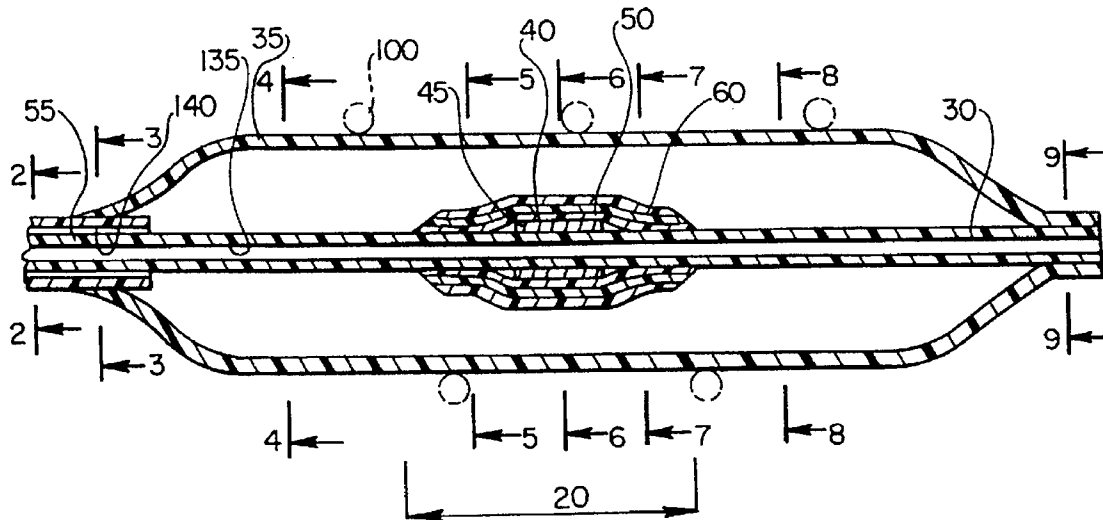


Fig. 1

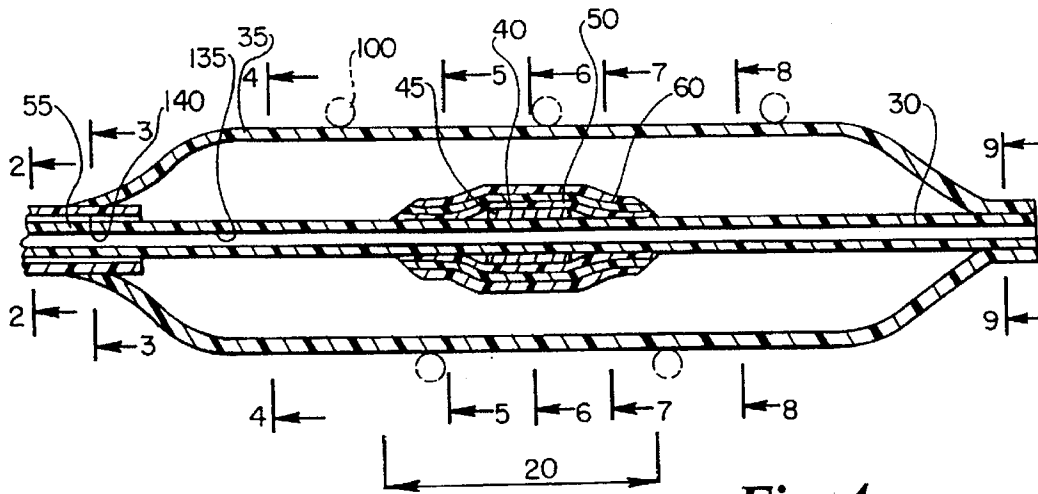


Fig. 2

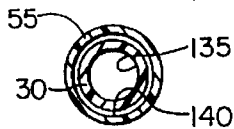


Fig. 3

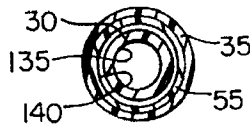


Fig. 4

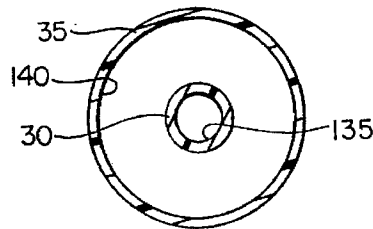


Fig. 5

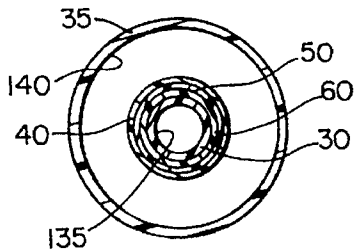


Fig. 6

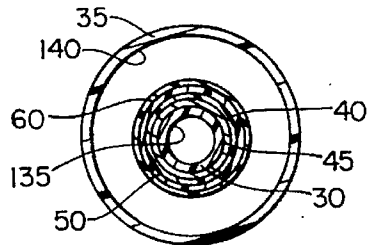


Fig. 7

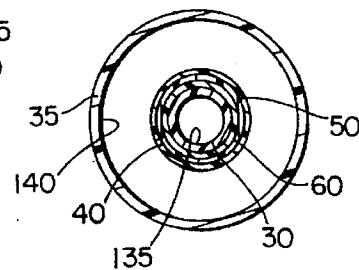


Fig. 8

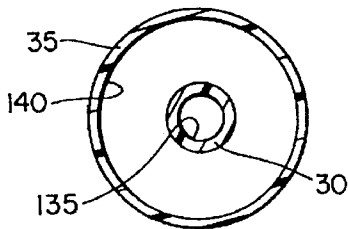


Fig. 9

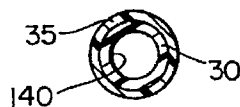


Fig. 10

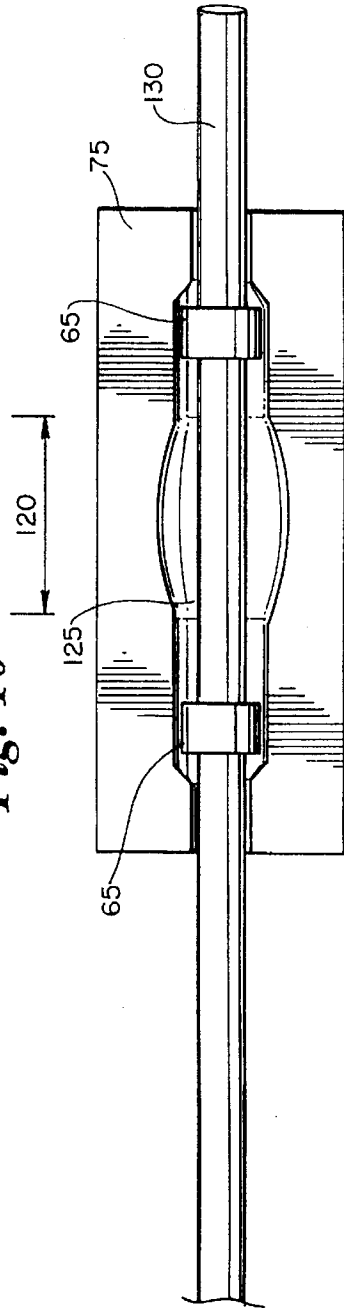


Fig. 11

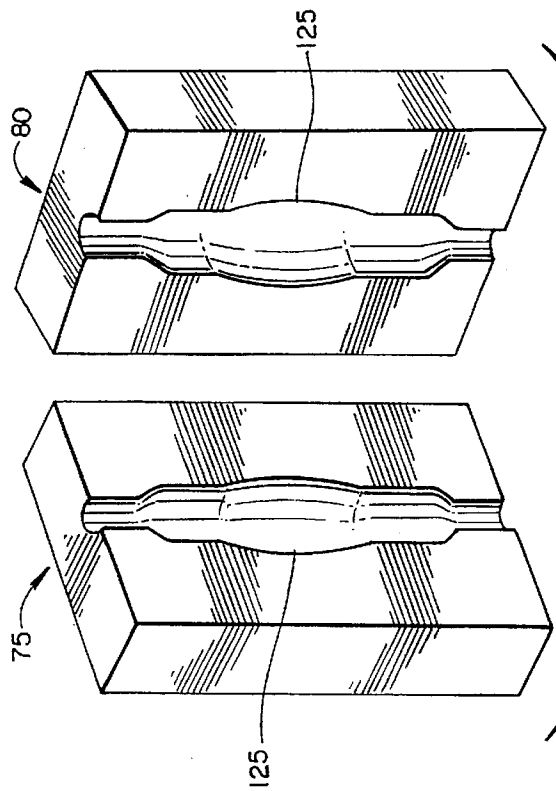


Fig. 12

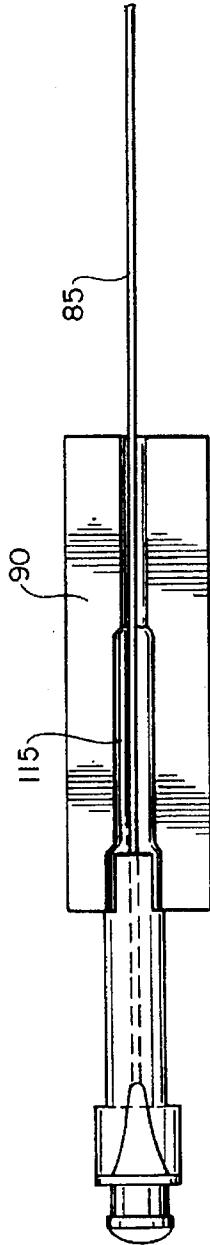


Fig. 13

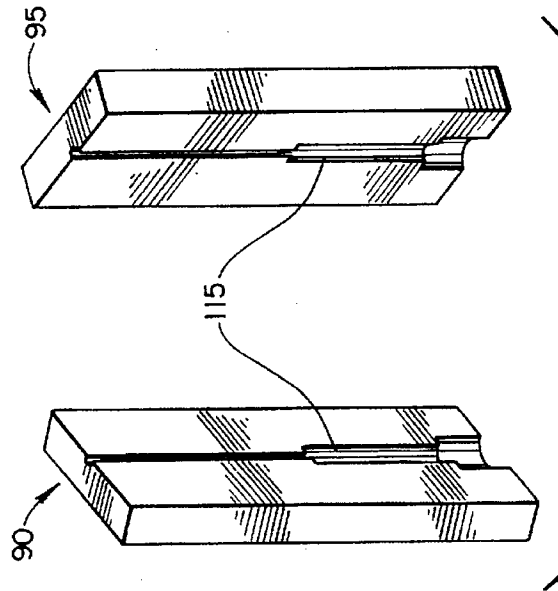


Fig. 14

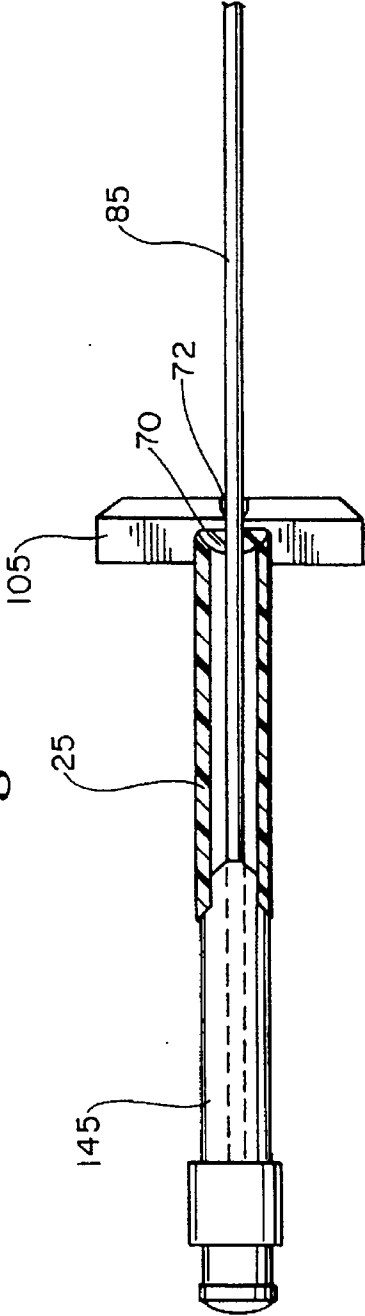
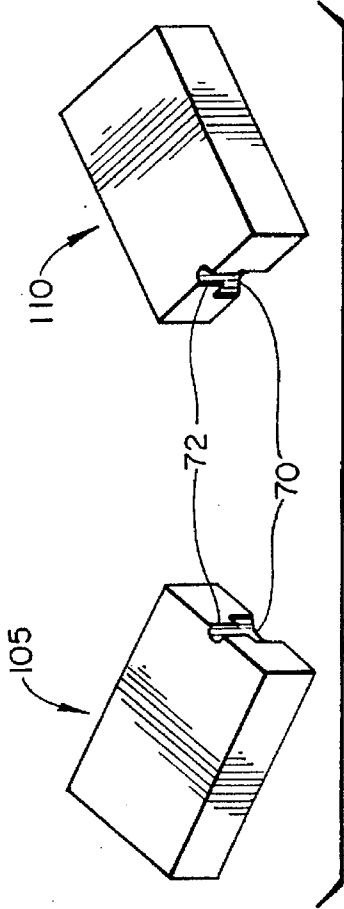


Fig. 15



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