



US005545149A

# United States Patent [19]

[11] Patent Number: **5,545,149**

Brin et al.

[45] Date of Patent: **Aug. 13, 1996**

[54] **METHOD OF CATHETER SEGMENT ATTACHMENT**

[75] Inventors: **David S. Brin**, West Newbury; **Peter A. Lunn**, Beverly; **Stuart R. MacDonald**, Danvers, all of Mass.

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[73] Assignee: **Medtronic, Inc.**, Minneapolis, Minn.

[21] Appl. No.: **236,766**

[22] Filed: **May 2, 1994**

### Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 083,840, Jun. 25, 1993, abandoned.

[51] Int. Cl.<sup>6</sup> ..... **A61M 5/32**

[52] U.S. Cl. .... **604/265; 604/282**

[58] Field of Search ..... **604/200, 202, 604/264, 265; 128/658, 656**

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Polyuretoous: The Bridge Between Silicone Rubbers and Plastics (chart).

Photograph of 7F SciMed Triguide Sample A with Green Transition.

*Primary Examiner*—C. Fred Rosenbaum

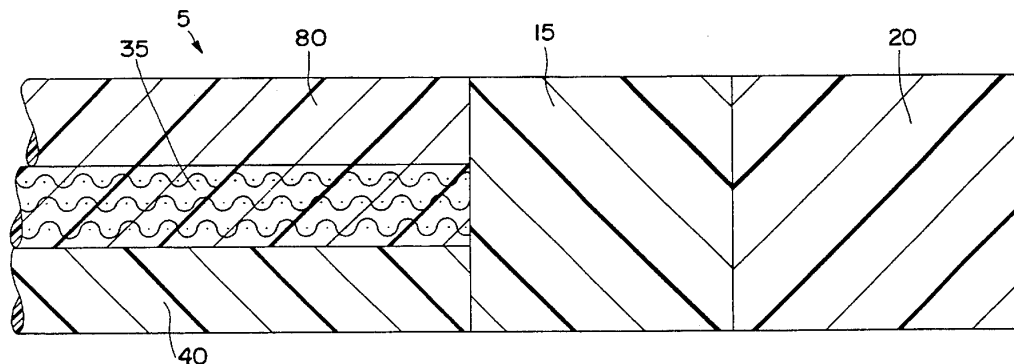
*Assistant Examiner*—Chalin Smith

*Attorney, Agent, or Firm*—Hal Patton; Dianne M. F. Plunkett

### [57] ABSTRACT

A therapeutic catheter and used in percutaneous transluminal coronary angioplasty with the catheter comprising a shaft (5) a soft tip assembly. The assembly consists of a transition tube (15), a soft tip tube (20), and plug tube (25). The assembly is surrounded by a shrink wrap means. An infrared source (45) is applied to the interface of the shaft (5) and transition tube (15) with the heat being propagated to the transition tube (15) and the soft tip tube (20). The transition tube (15) is formed of materials having a tensile strength of at least 150% of the materials comprising the soft tip tube (20).

24 Claims, 4 Drawing Sheets



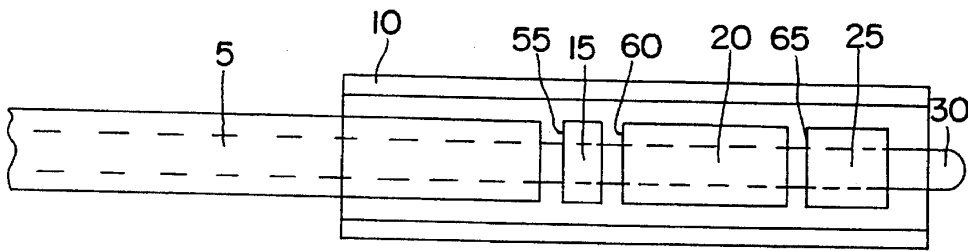


FIG. 1

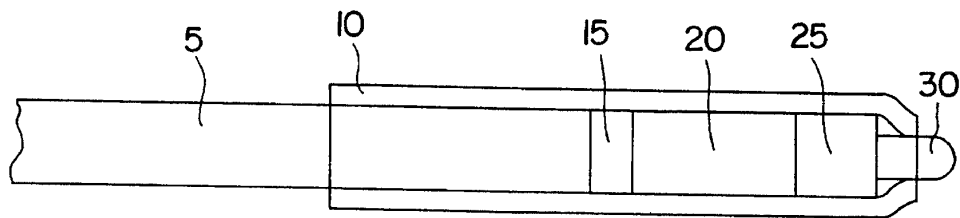


FIG. 2

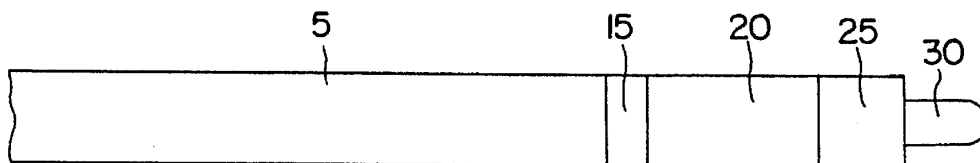


FIG. 3

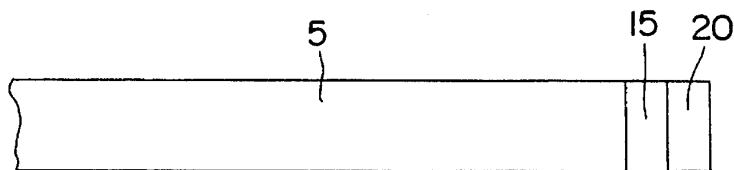


FIG. 4

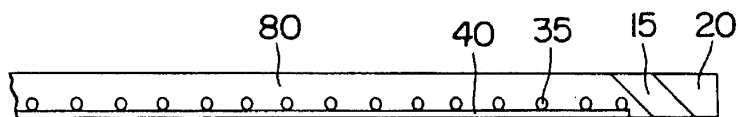


FIG. 5

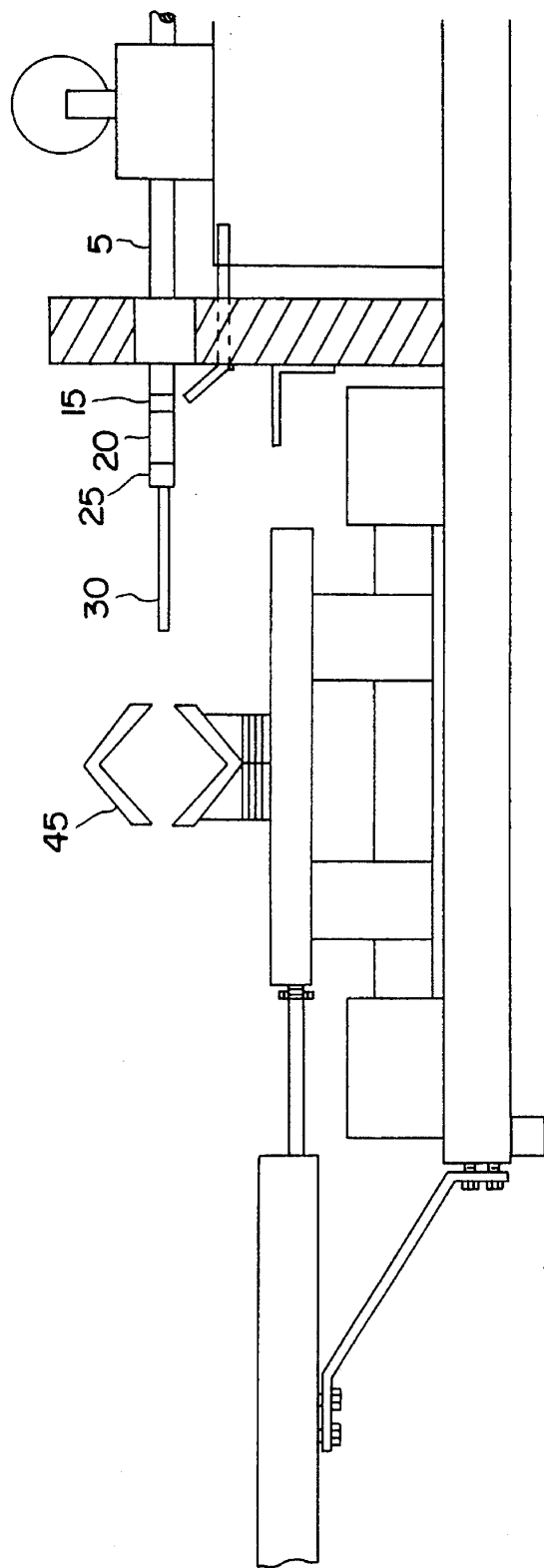


FIG. 6

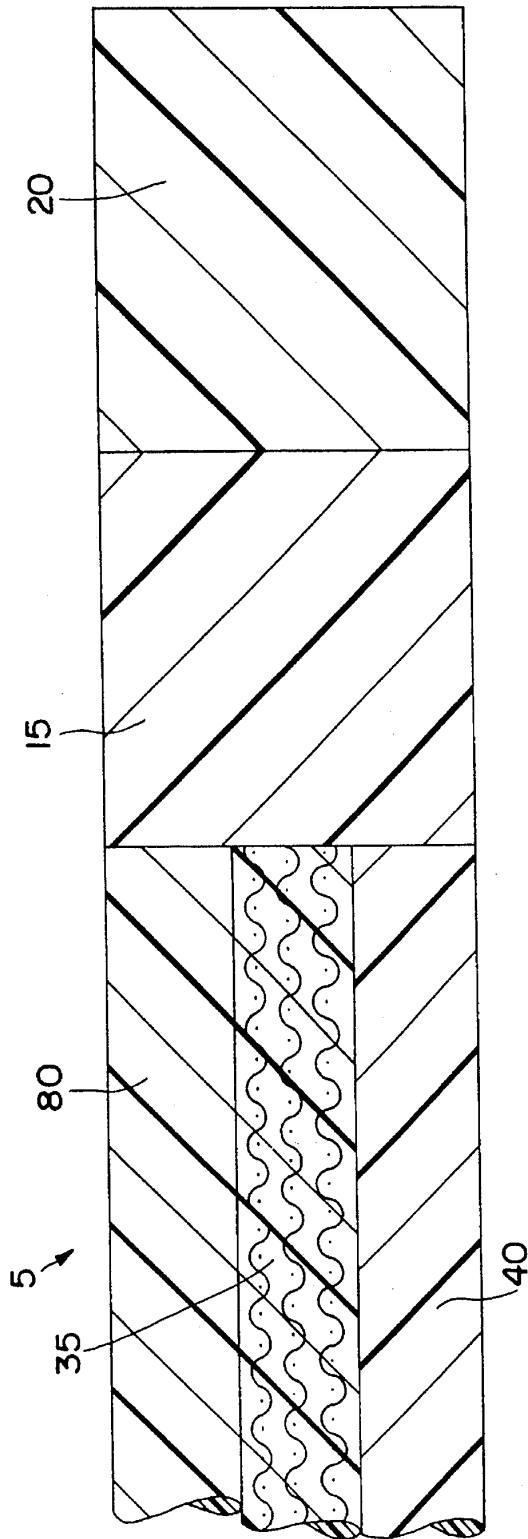


FIG. 7

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