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United States Patent [19]

Ellis et al.

[11] **Patent Number:** **6,007,543**[45] **Date of Patent:** ***Dec. 28, 1999**[54] **STENT DELIVERY SYSTEM WITH STENT SECUREMENT MEANS**[75] Inventors: **Louis G. Ellis**, St. Anthony; **Andrew J. Dusbabek**, Dayton; **Christopher R. Larson**, St. Paul; **Terry V. Brown**, Fridley, all of Minn.[73] Assignee: **SciMed Life Systems, Inc.**, Maple Grove, Minn.

[*] Notice: This patent is subject to a terminal disclaimer.

[21] Appl. No.: **08/702,150**[22] Filed: **Aug. 23, 1996**[51] Int. Cl.⁶ **A61F 11/00**[52] U.S. Cl. **606/108**; 606/195; 606/198

[58] Field of Search 606/108, 194, 606/195, 198; 604/96

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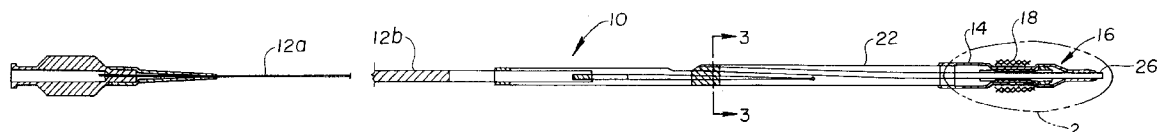
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Primary Examiner—Richard J. Apley*Assistant Examiner*—Justine R. Yu*Attorney, Agent, or Firm*—Vidas, Arrett & Steinkraus, P.A.[57] **ABSTRACT**

A stent delivery system to facilitate introduction and placement of a stent, including a catheter having an expandable distal portion constructed and arranged for expanding the outer diameter of the catheter from a contracted state to an expanded state: a stent positioned around the distal portion of the catheter having a contracted condition and being expandable to an expanded condition, and being sized in the contracted condition to closely surround the catheter in the contracted state, the expandable distal portion of the catheter including a balloon within which there is included on the catheter shaft at least one body of a diameter larger than the catheter shaft to which the stent and balloon are fitted, as by crimping, for holding the stent in place until it is released therefrom by expansion of the balloon.

33 Claims, 4 Drawing Sheets

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Fig. 1

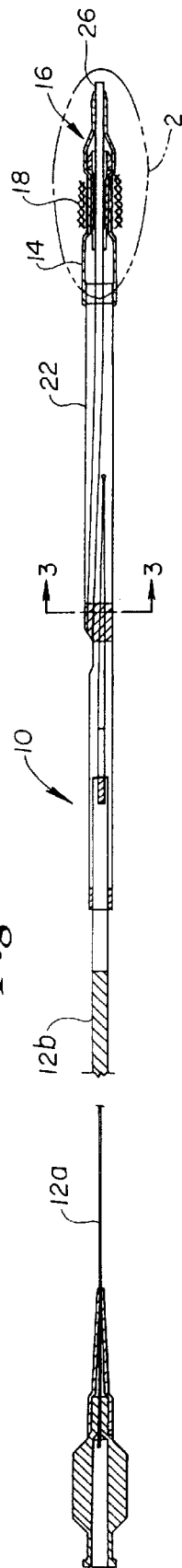


Fig. 2

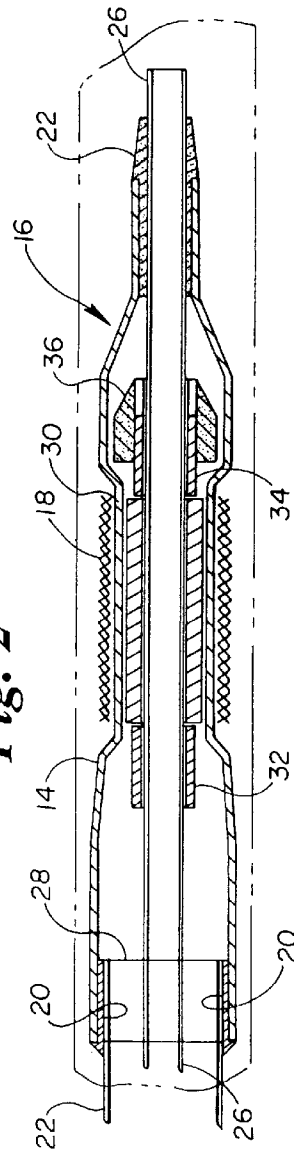


Fig. 3

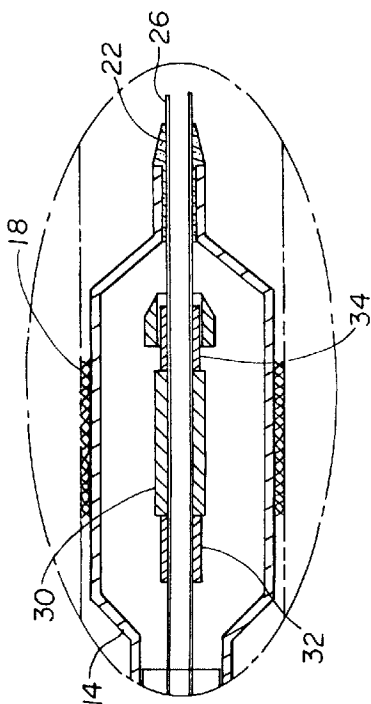


Fig. 4

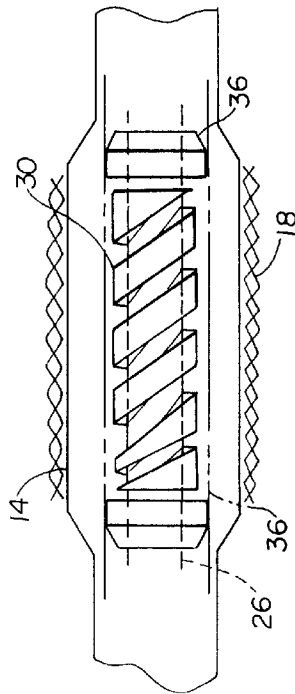


Fig. 6

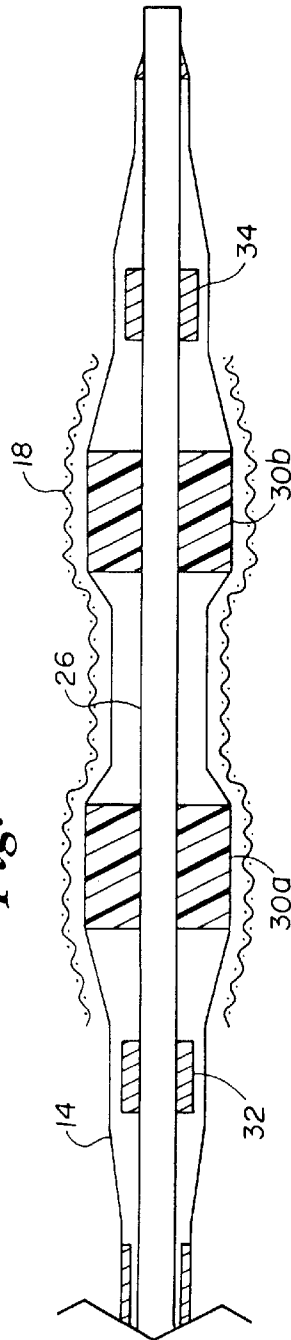
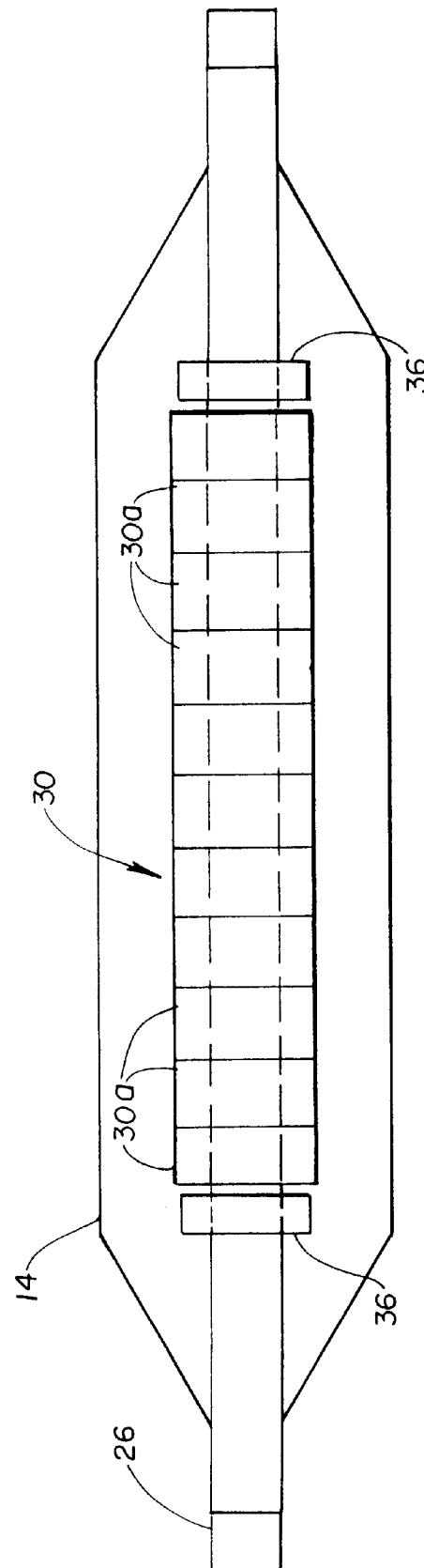


Fig. 5

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