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# United States Patent [19]

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Andersen et al.

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## [54] SYSTEM AND METHOD FOR IMPLANTING CARDIAC VALVES

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[21] Appl. No.: **801,036**

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[22] Filed: **Feb. 19, 1997**

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### Related U.S. Application Data

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### [30] Foreign Application Priority Data

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May 18, 1990 [DK] Denmark ..... 1246/90

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[51] Int. Cl.<sup>6</sup> ..... **A61F 2/24**

### [57] ABSTRACT

[52] U.S. Cl. .... **623/2; 606/108**

A valve prosthesis (9) for implantation in the body by use of catheter (11) comprises a stent made from an expandable cylinder-shaped thread structure (2,3) comprising several spaced apices (4). The elastically collapsible valve (4) is mounted on the stent as the commissural points (5) of the valve (6) are secured to the projecting apices (4).

[58] Field of Search ..... 623/2, 900; 606/108; 600/36

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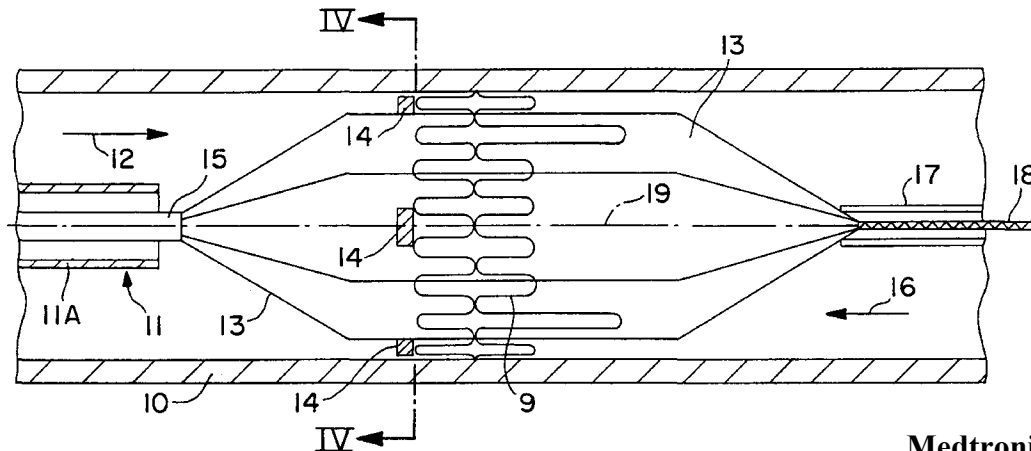
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The valve prosthesis (9) can be compressed around the balloon means (13) of the balloon catheter (11) and be inserted in a channel, for instance in the aorta (10). When the valve prosthesis is placed correctly the balloon means (13) is inflated thereby expanding the stent and wedging it against the wall of aorta. The balloon means is provided with beads (14) to ensure a steady fastening of the valve prosthesis on the balloon means during insertion and expansion.

The valve prosthesis (9) and the balloon catheter (11) make it possible to insert a cardiac valve prosthesis without a surgical operation comprising opening the thoracic cavity.

(List continued on next page.)

**8 Claims, 4 Drawing Sheets**



**Medtronic Exhibit 1013**

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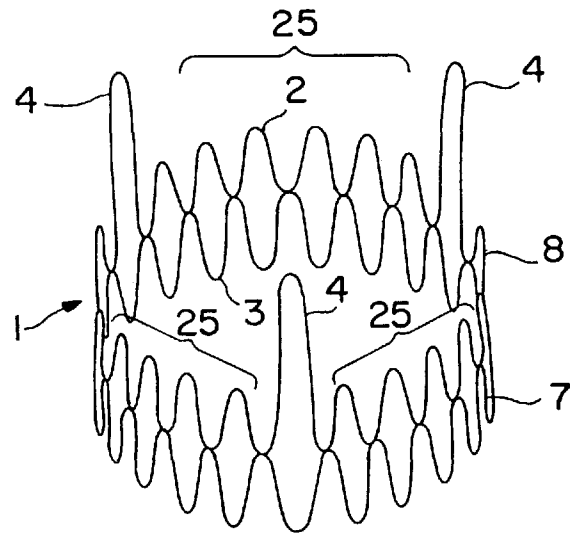


FIG. 1

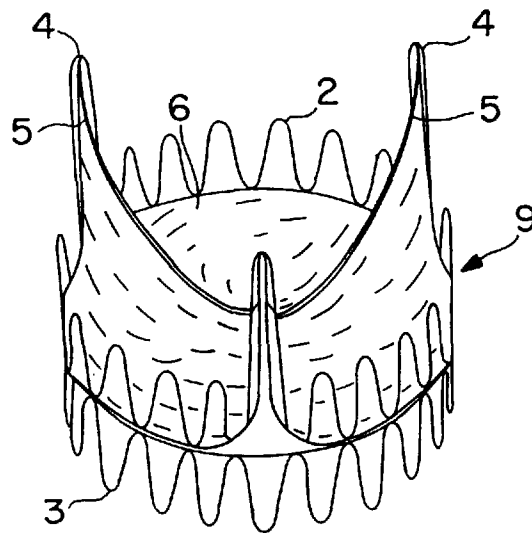
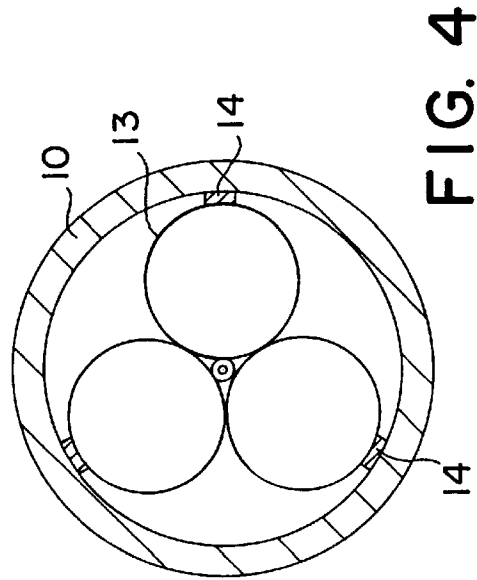
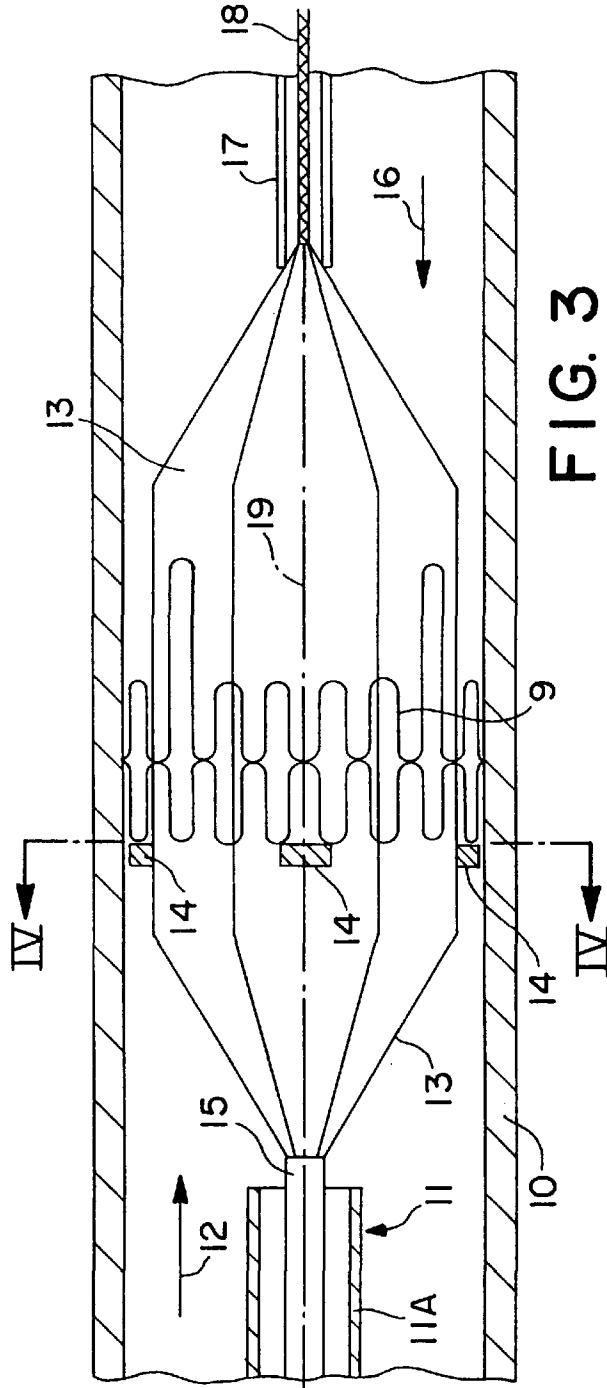


FIG. 2



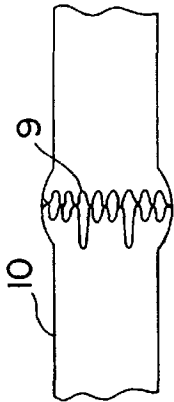


FIG. 5

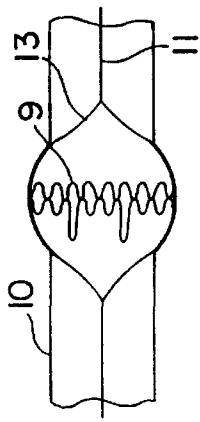


FIG. 6

FIG. 7

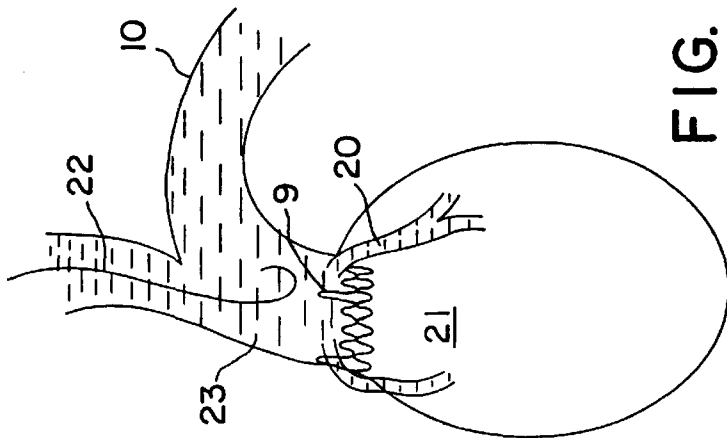


FIG. 8

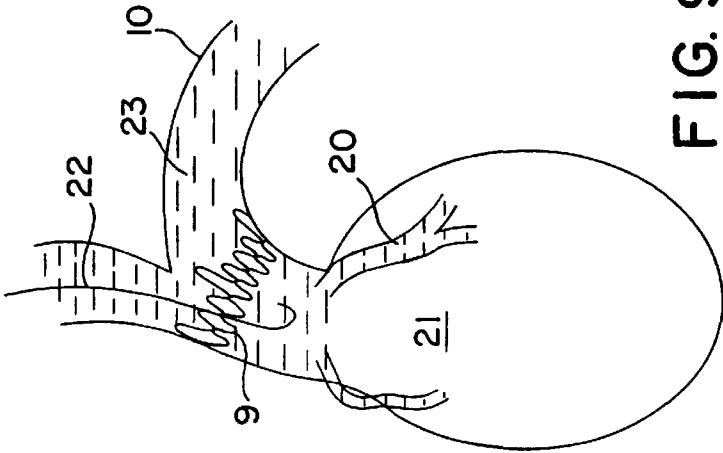


FIG. 9

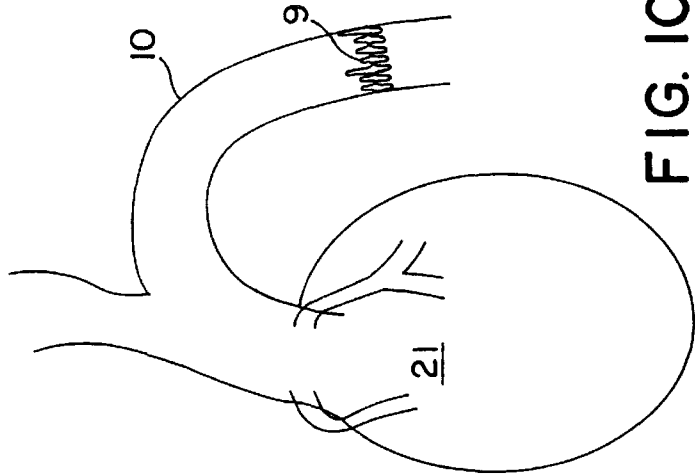


FIG. 10

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