

- [54] SELF-EXPANDING PROSTHESIS HAVING STABLE AXIAL LENGTH
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[57] ABSTRACT

A body implantable stent consists of two or more generally tubular, coaxial and slidably connected stent segments. Each of the stent segments is of open weave construction, formed of multiple braided, helically wound strands of resilient material. The stent is elastically deformed to a reduced radius when deployed. When released after positioning, the stent self-expands radially into contact with a tissue wall segment defining a blood vessel or other body cavity. As each stent segment expands radially, it contracts in the axial direction. To preserve a consistent length of the stent in spite of axial contraction of the segments, the axially outward and non-overlapping portions of the stent can be designed for secure fixation to the tissue wall segment, for example as radially outward flares. Accordingly, axial contraction occurs as a reduction in the length of the medial regions where adjacent stent segments overlap. Alternative approaches to maintain axial length include the addition of reinforcing filaments near the stent opposite ends to increase the restoring force, the provision of fixation hooks at opposite ends of the stent, and securing an elongate, axially directed, flexible and inextensible wire to the opposite ends of the stent.

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