

(12) **United States Patent**  
**Kovach et al.**

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(54) **ARTICLES INCLUDING EXPANDED POLYTETRAFLUOROETHYLENE MEMBRANES WITH SERPENTINE FIBRILS AND HAVING A DISCONTINUOUS FLUOROPOLYMER LAYER THEREON**

(58) **Field of Classification Search**  
CPC ..... A61F 2/82; A61F 2/91; A61F 2250/0098  
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(\* ) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 105 days.

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This patent is subject to a terminal disclaimer.

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(57) **ABSTRACT**  
Articles comprising an expanded polytetrafluoroethylene membrane having serpentine fibrils and having a discontinuous coating of a fluoropolymer thereon are provided. The fluoropolymer may be located at least partially in the pores of the expanded fluoropolymer membrane. In exemplary embodiments, the fluoropolymer is fluorinated ethylene propylene. The application of a tensile force at least partially straightens the serpentine fibrils, thereby elongating the article. The expanded polytetrafluoroethylene membrane may include a microstructure of substantially only fibrils. The articles can be elongated to a predetermined point at which further elongation is inhibited by a dramatic increase in stiffness. In one embodiment, the articles are used to form a covered stent device that requires little force to distend in the radial direction to a first diameter but is highly resistant  
(Continued)

**Related U.S. Application Data**

(63) Continuation-in-part of application No. 13/351,052, filed on Jan. 16, 2012, now abandoned.

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**A61F 2/07** (2013.01)  
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