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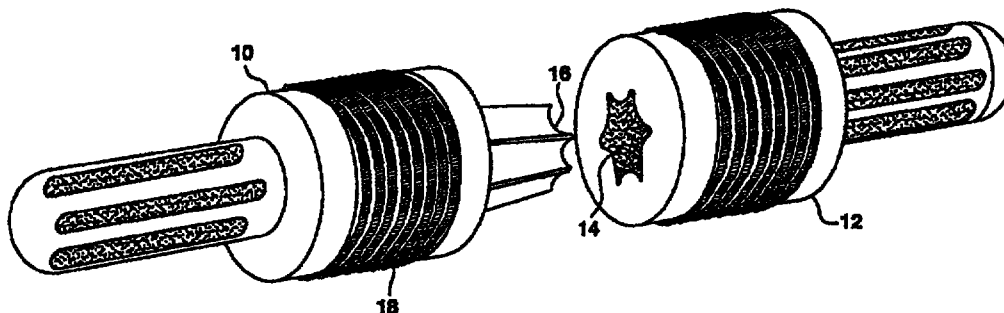
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| (51) International Patent Classification <sup>6</sup> :<br><b>A61B 17/72</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>A1</b> | (11) International Publication Number: <b>WO 98/19617</b><br>(43) International Publication Date: 14 May 1998 (14.05.98)                                                                                                                                                  |
| <p>(21) International Application Number: PCT/US97/03836</p> <p>(22) International Filing Date: 6 March 1997 (06.03.97)</p> <p>(30) Priority Data:<br/>08/742,733 1 November 1996 (01.11.96) US</p> <p>(71) Applicant: THE JOHNS HOPKINS UNIVERSITY [US/US];<br/>Applied Physics Laboratory, Johns Hopkins Road, Laurel,<br/>MD 20723-6099 (US).</p> <p>(72) Inventors: BIERMANN, Paul, J.; 9563 Guilford Road, Colum-<br/>bia, MD 21046 (US). ROBERTS, Jack, C.; 5141 Columbia<br/>Road, Columbia, MD 21044 (US). CORVELLI, Amy, A.;<br/>Apartment 30, 7621 Woodpark Lane, Columbia, MD 21046<br/>(US).</p> <p>(74) Agents: COOCH, Francis, A. et al.; The Johns Hopkins<br/>University, Applied Physics Laboratory, Johns Hopkins<br/>Road, Laurel, MD 20723-6099 (US).</p> |           | <p>(81) Designated States: AU, BR, CA, CN, CZ, HU, IL, JP, KR,<br/>MX, NO, NZ, PL, RU, SG, SK, UA, European patent (AT,<br/>BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC,<br/>NL, PT, SE).</p> <p><b>Published</b><br/><i>With international search report.</i></p> |

(54) Title: ORTHOPEDIC IMPLANT



(57) Abstract

An orthopedic implant comprising a thermoplastic polymer or a composite comprising, in one embodiment, polyetheretherketone reinforced with 10 % by volume of glass fibers, with an elastic modulus approximating the elastic modulus of bone. A porous coating is formed on the implant surface by creating a roughness thereon, by coating the surface with hydroxyapatite or by embedding a biocompatible material (18) such as titanium in the surface. A two piece embodiment of the implant is joined and locked together, after the opposite ends of each piece (10, 12) are inserted in the medullary canal, using an interlocking mechanism comprising a fluted protrusion (16) on one piece and a corresponding fluted cavity (14) in the other piece with the fluted portions being complementarily tapered.