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[Continued on next page]

(54) Title: ADJUSTABLE LENGTH STRUT APPARATUS FOR ORTHOPAEDIC APPLICATIONS

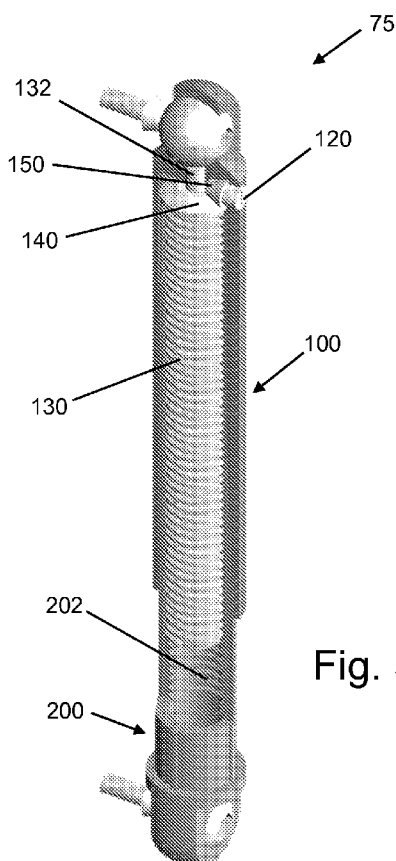


Fig. 3

(57) Abstract: An adjustable-length orthopaedic strut apparatus having minimal x-ray absorption, the capability to produce small length adjustments with minimal axial backlash, and a body devoid of exposed threads, the apparatus having an outer telescoping strut element, an inner telescoping strut element, a threaded drive element rotationally mounted inside the outer telescoping strut element and engaging threads inside the inner telescoping strut element, and an input gear-train arranged to produce fine adjustment of the strut length by generating rotation of the threaded drive element that can be smaller than the input gear rotation. A preferred embodiment also includes compliant preload structures for reducing axial backlash between all moving elements, and one or more locking pins which can be selectively disengaged to adjust the compressive stiffness of the adjustable length strut.



NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG,  
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# INTERNATIONAL SEARCH REPORT

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<b>A. CLASSIFICATION OF SUBJECT MATTER</b>  <i>A61B 17/66(2006.01)i</i>  According to International Patent Classification (IPC) or to both national classification and IPC				
<b>B. FIELDS SEARCHED</b>  Minimum documentation searched (classification system followed by classification symbols) IPC 8: A61B  Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Korean Utility models and applications for Utility models since 1975 Japanese Utility models and applications for Utility models since 1975  Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) eKIPASS(KIPO Internal) "adjustable", "variable", "strut", "orthopaedic", "rotate", "gear", "fixator"				
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>				
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.		
A	US 6030386 A (HAROLD S. TAYLOR et al) 29 February 2000 See claim 1 and 6, column 6, line 25 - column 7, line 21, figures 1 and 2	1-20		
A	US 5702389 A (HAROLD S. TAYLOR et al) 30 December 1997 See claim 1, abstract, figure 1	1-20		
A	US 5891143 A (J. CHARLES TAYLOR et al) 6 April 1999 See claim 1, abstract, figures 2 and 11	1-20		
A	US 6383156 B1 (ROBERT-JAN ENZERINK et al) 7 May 2002 See claim 1, abstract, figures 1-3	1-20		
A	US 4536114 A (ROBERT R. BELEW) 20 August 1985 See claim 1, abstract, figure 4	1-20		
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <span style="margin-left: 100px;"><input checked="" type="checkbox"/> See patent family annex.</span>				
<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top; border: none;">           * Special categories of cited documents:            "A" document defining the general state of the art which is not considered to be of particular relevance            "E" earlier application or patent but published on or after the international filing date            "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)            "O" document referring to an oral disclosure, use, exhibition or other means            "P" document published prior to the international filing date but later than the priority date claimed         </td> <td style="width: 50%; vertical-align: top; border: none;">           "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention            "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone            "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art            "&amp;" document member of the same patent family         </td> </tr> </table>			* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family
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Date of the actual completion of the international search  04 FEBRUARY 2009 (04.02.2009)		Date of mailing of the international search report  <b>06 FEBRUARY 2009 (06.02.2009)</b>		
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Information on patent family members

International application No.

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