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(54) **KNEE REHABILITATION DEVICE WITH MEASUREMENT ELEMENT**

1,590,499 A \* 6/1926 Cozad ..... A61B 5/1071 33/1 R

2,413,053 A 12/1946 Kolarik

2,545,843 A \* 3/1951 Henry ..... 602/16

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(Continued)

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**FOREIGN PATENT DOCUMENTS**

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EP 0350956 A2 1/1990

JP 2002-065770 A 3/2002

KR 10-2009-0022266 A 3/2009

(\* ) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

**OTHER PUBLICATIONS**

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International Search Report dated Nov. 28, 2011 from International Patent Application No. PCT/US2011/028575, filed Mar. 15, 2011.

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**Related U.S. Application Data**

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(57) **ABSTRACT**

In one example, a rehabilitation device includes a first element having first and second spaced-apart, generally parallel elongate members having proximal and distal ends. A second element is rotatably coupled to the first element and includes first and second spaced-apart, generally parallel elongate members having proximal and distal ends. One of the first and second elements is angularly adjustable relative to the other. A measurement device includes a measurement element connected to one of the first and second elements and configured for rotation relative to one of the first and second elements, such that when the rehabilitation device is operably disposed with respect to a joint of a patient, the measurement element is arranged for contact with anatomy of the patient. Finally, a scale is disposed proximate the measurement element and indicates a position of the measurement element relative to another portion of the rehabilitation device.

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**A61B 5/11** (2006.01)

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(52) **U.S. Cl.**

CPC ..... **A61H 1/024** (2013.01); **A61H 2201/0161** (2013.01); **A61H 2201/1269** (2013.01); **A61H 2201/1642** (2013.01)

(58) **Field of Classification Search**

CPC ..... **A61B 5/1071**

See application file for complete search history.

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

1,066,190 A 7/1913 Ellingsworth

1,336,695 A 4/1920 Gromes

**25 Claims, 30 Drawing Sheets**

