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(54) **GUIDING APPARATUS FOR X-RAY-FREE SCREW PLACEMENT BY SPINAL POSTERIOR APPROACH**

(71) Applicant: **THE FIRST AFFILIATED HOSPITAL OF NANJING MEDICAL UNIVERSITY**, Nanjing, Jiangsu (CN)

(72) Inventors: **Xiaojian Cao**, Jiangsu (CN); **Haijun Li**, Jiangsu (CN); **Jian Tang**, Jiangsu (CN); **Lipeng Yu**, Jiangsu (CN); **Hao Xie**, Jiangsu (CN); **Lei Yang**, Jiangsu (CN)

(73) Assignee: **THE FIRST AFFILIATED HOSPITAL OF NANJING MEDICAL UNIVERSITY**, Nanjing, Jiangsu (CN)

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See application file for complete search history.

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Primary Examiner — Eduardo C Robert
Assistant Examiner — Michelle C Eckman

(74) *Attorney, Agent, or Firm* — Novick, Kim & Lee, PLLC; Allen Xue

(57) **ABSTRACT**

A guiding apparatus for x-ray-free screw placement by a spinal posterior approach, comprising an interspinous spacer, a slide scale (1), and an angle-changing rod. The apparatus is simple to operate, easy to grasp, and well accepted by physicians. A reliable effect is provided in screw placement. Significantly reduced X-ray exposure is allowed for patients and medical staff. In a small-incision minimally invasive screw placement operation, even without exposing the spinal ligament, a small spike-like protrusion of a base (2) of the interspinous spacer can ensure accurate inters-

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