



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

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(54) **UNITARY SPINAL DISC IMPLANT**

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(57) **ABSTRACT**

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A unitary intervertebral device, having no moving components is provided for non-fusion articulation applications. The interbody articulating device allows for limited flexion and rotation between adjacent vertebrae, helping to preserve or restore near-normal motion between adjacent vertebrae. Rotational motion is achieved through one or more protrusions incorporated into the spinal interbody device. In one articulating form, a first protrusion extends perpendicularly from the superior aspect of the disc-shaped interbody device to form a spike or rotational protrusion, while a second protrusion extends axially from the inferior aspect of the interbody device to form a second spike or rotational protrusion. Protrusions preferably extend perpendicular from the apex of both the first and second arcuate articulating surfaces. In another form, a single protrusion extends axially from the superior aspect of a circular-shape of the interbody device to form a spike or anchoring protrusion, while the inferior surface may be slightly rounded and/or comprising a bone-in-growth promoting surface. In another form, one or both of the first and/or second arcuate surfaces may be highly polished. Numerous planar geometries are described to define various profiles of the disc replacement implant which may be utilized, including irregular Reuleaux polygons. Numerous variations of the disc replacement and methods of use are described. Similarly configured fusion salvage devices are also described.

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

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(58) **Field of Classification Search**

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See application file for complete search history.

20 Claims, 11 Drawing Sheets

