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Seaton, Jr. et al.

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(54) **MATERIALS AND APPARATUS FOR IN-SITU BONE REPAIR**

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623/23.5; 623/23.61; 623/23.6; 623/23.62

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(58) **Field of Classification Search**
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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 102 days.

See application file for complete search history.

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(56) **References Cited**

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(65) **Prior Publication Data**

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Related U.S. Application Data

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(63) Continuation-in-part of application No. 11/078,146, filed on Mar. 11, 2005, now abandoned, and a continuation-in-part of application No. 11/729,231, filed on Mar. 28, 2007, now abandoned.

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(57) **ABSTRACT**

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Compositions for use in treating and repairing orthopedic defects are provided. The compositions are especially useful for performing percutaneous vertebroplasty, percutaneous kyphoplasty and other procedures. When cured, the compositions are relatively solid but compressible, and prior to curing are viscous liquids with a low enough viscosity to fill voids in cavities such as voids within fractured vertebrae. Optionally, the properties of a composition according to the invention can be adjusted taking into account the hardness and density of the orthopedic structure to be repaired. Also disclosed are devices and methods for using the compositions, and a kit containing components for forming and utilizing the composition.

(52) **U.S. Cl.**
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12 Claims, 7 Drawing Sheets