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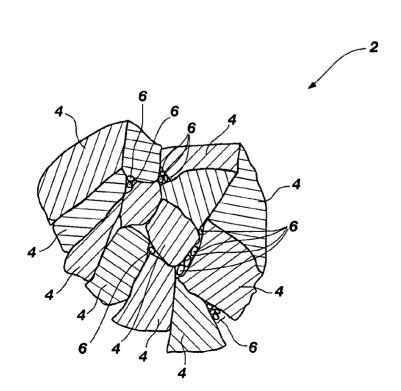
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(54) Title: SUPERABRASIVE ELEMENT COMPRISING ULTRA-DISPERSED DIAMOND GRAIN STRUCTURES, STRUCTURES UTILIZING SAME, AND METHODS OF MANUFACTURE



(57) Abstract: Superabrasive elements, methods of fabricating such elements, and applications utilizing such elements. In one embodiment, superabrasive element includes a mass of polycrystalline diamond including ultra-dispersed diamond grain structures present in an amount greater than zero weight percent and less than about 75 weight percent of the mass of polycrystalline diamond. structures and apparatuses that utilize the superabrasive elements, such as polycrystalline diamond compacts (PDCs) and drill bits are disclosed. Methods of manufacture are also disclosed.

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PCT/US2007/016322 A. CLASSIFICATION OF SUBJECT MATTER INV. C04B35/52 C04B35/645 According to International Patent Classification (IPC) or to both national classification and IPC B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) CO4B E21B Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the international search (name of data base and, where practical, search terms used) EPO-Internal C. DOCUMENTS CONSIDERED TO BE RELEVANT Category* Citation of document, with indication, where appropriate, of the relevant passages Relevant to claim No. χ US 5 954 147 A (OVERSTREET JAMES LESLIE 1-20 [US] ET AL) 21 September 1999 (1999-09-21) column 3, line 25 - line 56 column 8, line 53 - column 9, line 9; claims 1,3,8 Α US 2005/186104 A1 (KEAR BERNARD H [US] ET 1,15 AL) 25 August 2005 (2005-08-25) paragraph [0011] paragraph [0029] paragraph [0038] - paragraph [0040] paragraph [0070] paragraph [0086] EP 0 715 930 A (DE BEERS IND DIAMOND [ZA]) Α 1,15 12 June 1996 (1996-06-12) claims

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