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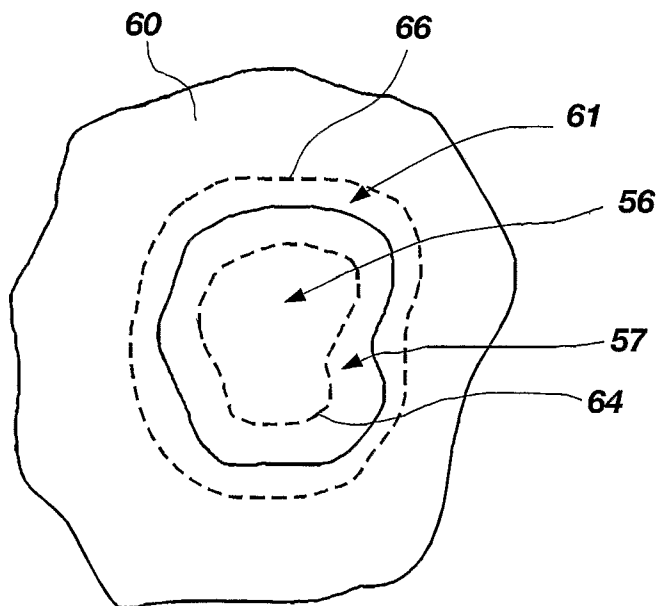
- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
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(54) Title: COMPOSITE MATERIALS INCLUDING NICKEL-BASED MATRIX MATERIALS AND HARD PARTICLES, TOOLS INCLUDING SUCH MATERIALS, AND METHODS OF USING SUCH MATERIALS



(57) Abstract: An abrasive wear-resistant material includes a matrix and sintered and cast tungsten carbide granules. A device for use in drilling subterranean formations includes a first structure secured to a second structure with a bonding material. An abrasive wear-resistant material covers the bonding material. The first structure may include a drill bit body and the second structure may include a cutting element. A method for applying an abrasive wear-resistant material to a drill bit includes providing a bit, mixing sintered and cast tungsten carbide granules in a matrix material to provide a pre-application material, heating the pre-application material to melt the matrix material, applying the pre-application material to the bit, and solidifying the material. A method for securing a cutting element to a bit body includes providing an abrasive wear-resistant material to a surface of drill bit that covers a brazing alloy disposed between the cutting element and the bit body.

