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(54) Title: METHODS FOR FORMING POLYCRYSTALLINE MATERIALS INCLUDING PROVIDING MATERIAL WITH SUPERABRASIVE GRAINS PRIOR TO HPHT PROCESSING, AND POLYCRYSTALLINE COMPACTS AND CUTTING ELEMENTS FORMED BY SUCH METHODS

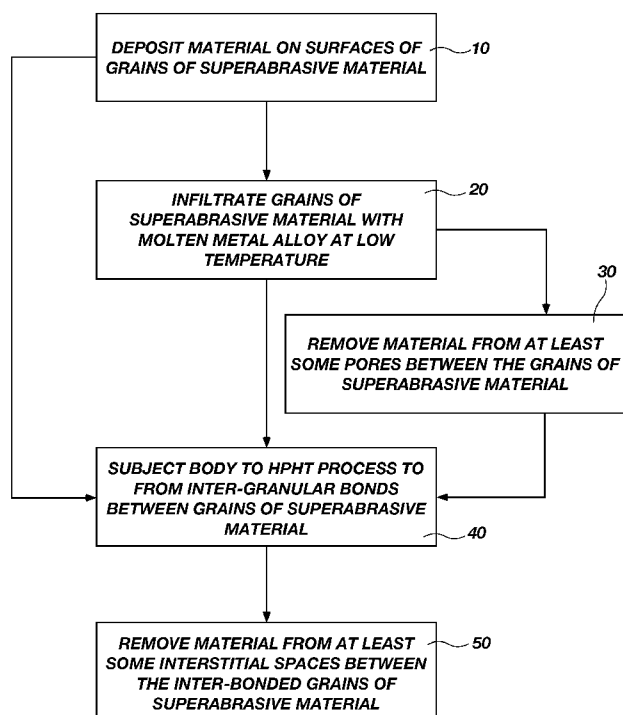


FIG. 1

(57) Abstract: Grains of superabrasive material may be infiltrated with a molten metal alloy at a relatively low temperature, and the molten metal alloy may be solidified within interstitial spaces between the grains of superabrasive material to form a solid metal alloy having the grains of superabrasive material embedded therein. The solid metal alloy with the grains of superabrasive material embedded therein may be subjected to a high pressure and high temperature process to form a polycrystalline superabrasive material. A polycrystalline superabrasive material also may be formed by depositing material on surfaces of grains of superabrasive material in a chemical vapor infiltration process to form a porous body, which then may be subjected to a high pressure and high temperature process. Polycrystalline compacts and cutting elements including such compacts may be formed using such methods.



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