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(54) **Method for reducing intermetallic compounds in matrix bit bondline**

(57) An apparatus and method for manufacturing a downhole tool that reduces failures occurring along a bondline between a cemented matrix coupled around a blank. The cemented matrix material is formed from a tungsten carbide powder, a shoulder powder, and a binder material, wherein at least one of the tungsten carbide powder or the shoulder powder is absent of any free tungsten. The blank, which optionally may be coated, is sub-

stantially cylindrically shaped and defines a channel extending from a top portion and through a bottom portion of the blank. The absence of free tungsten from at least one of the tungsten carbide powder or the shoulder powder reduces the reaction with iron from the blank, thereby allowing the control and reduction of intermetallic compounds thickness within the bondline.

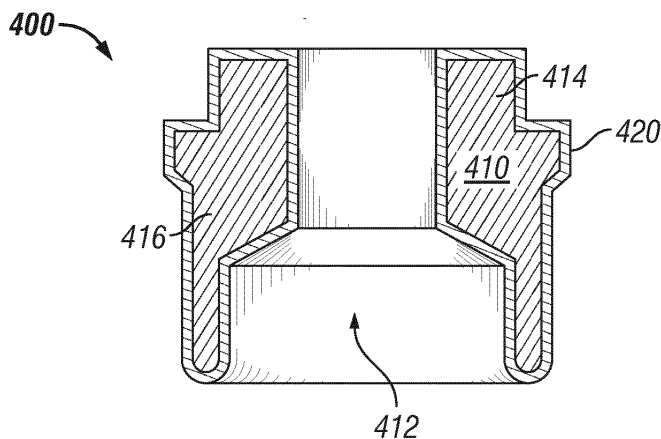


FIG. 4



EUROPEAN SEARCH REPORT

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EP 15 15 2253

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			TECHNICAL FIELDS SEARCHED (IPC)
			C22C C04B E21B
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
The Hague		18 March 2016	Mootz, Frank
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82