



(51) International Patent Classification:

B22F 1/00 (2006.01) *E21B 10/42* (2006.01)
B22F 5/00 (2006.01) *E21B 10/54* (2006.01)

(21) International Application Number:

PCT/US2016/033047

(22) International Filing Date:

18 May 2016 (18.05.2016)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

62/181,915 19 June 2015 (19.06.2015) US

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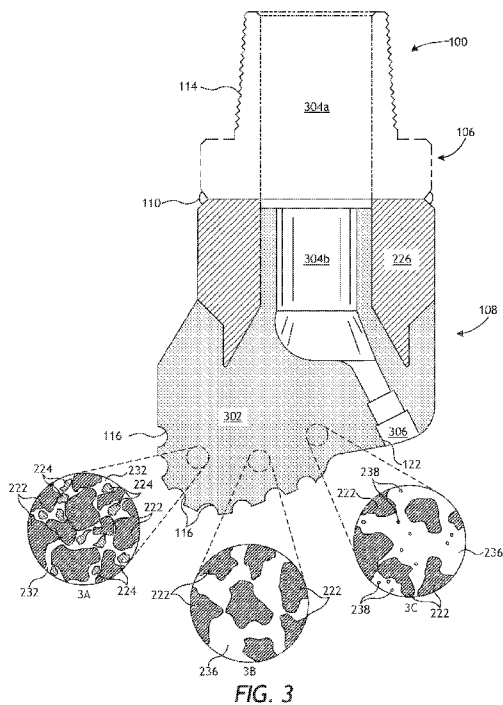
(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: REINFORCEMENT MATERIAL BLENDS WITH A SMALL PARTICLE METALLIC COMPONENT FOR METAL-MATRIX COMPOSITES

(57) Abstract: A metal-matrix composite includes a reinforced composite material including reinforcement material dispersed in a binder material. The reinforcement material includes a metallic component dispersed with reinforcing particles and at least 25 percent of the metallic component has a particle size of 50 microns or less.



WO 2017/003574 A3



Declarations under Rule 4.17:

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

Published:

— *with international search report (Art. 21(3))*

(88) Date of publication of the international search report:

23 February 2017

A. CLASSIFICATION OF SUBJECT MATTER**B22F 1/00(2006.01)i, B22F 5/00(2006.01)i, E21B 10/42(2006.01)i, E21B 10/54(2006.01)i**

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)

B22F 1/00; B22F 7/02; E21B 10/46; E21B 10/08; E21B 10/54; B24D 3/14; E21B 10/50; B22F 5/00; E21B 10/42

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & Keywords: MMC, reinforcement material, binder material, metallic component, particle size

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2010-0320004 A1 (DENG et al.) 23 December 2010 See paragraphs [0001], [0022]-[0055]; and figures 1-3, 3A.	1-20
A	WO 2015-088560 A1 (HALLIBURTON ENERGY SERVICES, INC.) 18 June 2015 See paragraphs [0001], [0030]-[0057]; and figures 1-8.	1-20
A	US 2013-0180786 A1 (THOMAS et al.) 18 July 2013 See paragraphs [0001], [0028]-[0083]; and figures 1-11.	1-20
A	US 2008-0209818 A1 (BELNAP et al.) 04 September 2008 See paragraphs [0032]-[0073]; and figures 1-8.	1-20
A	US 5662183 A (FANG, ZHIGANG) 02 September 1997 See column 1, line 5 - column 5, line 2; and figures 1-3.	1-20

 Further documents are listed in the continuation of Box C. See patent family annex.

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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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"&" document member of the same patent family

Date of the actual completion of the international search

19 January 2017 (19.01.2017)

Date of mailing of the international search report

20 January 2017 (20.01.2017)

Name and mailing address of the ISA/KR

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2016/033047

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