(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
8 December 2005 (08.12.2005)

PCT

(10) International Publication Number
WO 2005/116286 A3

(51) International Patent Classification:
C22C 45/02 (2006.01)

(21) International Application Number:
PCT/US2005/015365

(22) International Filing Date: 2 May 2005 (02.05.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10/841,873 6 May 2004 (06.05.2004) US

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

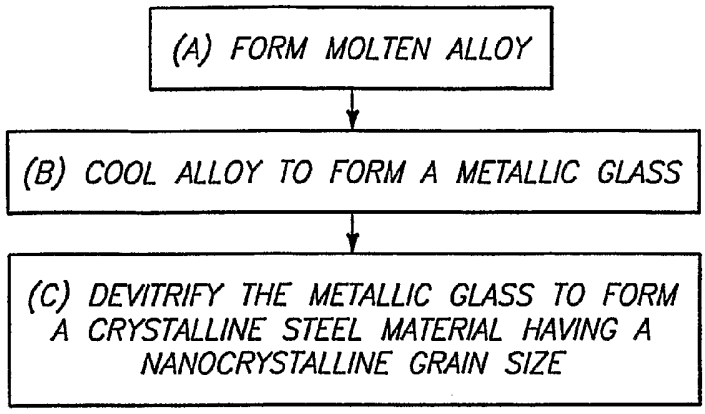
(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report*
— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

(88) Date of publication of the international search report:
8 September 2006

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHOD FOR FORMING A HARDENED SURFACE ON A SUBSTRATE



(57) Abstract: The invention encompasses a method of forming a metallic coating. A metallic glass coating is formed over a metallic substrate. After formation of the coating, at least a portion of the metallic glass can be converted into a crystalline material having a nanocrystalline grain size. The steps of this process are shown diagrammatically in Figure 1. The invention also encompasses metallic coatings comprising metallic glass. Additionally, the invention encompasses metallic coatings comprising crystalline metallic materials, with at least some of the crystalline metallic material having a nanocrystalline grain size.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US05/15365

A. CLASSIFICATION OF SUBJECT MATTER
IPC: **C22C 45/02**(2006.01)

USPC: 148/403,561,565
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)
U.S. : 148/ 403, 561, 565

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 practicable, search terms used)
Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 4,133,679 A (RAY) 09 January 1979 (09.01.1979), see entire document.	1,3,4,7,13 ---------- 2,5,6,8-12
X --- Y	US 4,210,443 A (RAY) 01 July 1980 (01.07.1980), see entire document.	1,3,4,7,13 ---------- 2,5,6,8-12
Y	US 5,032,469 A (MERZ et al.) 16 July 1991 (16.07.1991), see entire document.	6,12
Y	US 4,606,977 A (DICKSON et al.) 19 August 1986 (19.08.1986), see entire document.	6,12
Y	US 4,881,989 A (YOSHIZAWA et al.) 21 November 1989 (21.11.1989), see columns 23 and 24 and Figure 18.	2,5,8-11

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

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Date of the actual completion of the international search
14 June 2006 (14.06.2006)

Date of mailing of the international search report
11 JUL 2006

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Form PCT/ISA/210 (second sheet) (April 2005)

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US05/15365

Continuation of B. FIELDS SEARCHED Item 3:
WEST--search terms = hardness near (amorphous or glassy near (iron or fe)), plasma near (coat or deposit) near (amorphous or glassy)