

Title (en)  
METHOD FOR MANUFACTURING A GOLD ALLOY WIRE

Title (de)  
HERSTELLUNGSVERFAHREN EINES DRAHTES AUS EINER GOLDLEGIERUNG

Title (fr)  
PROCÉDÉ DE FABRICATION D'UN FIL EN ALLIAGE D'OR

Publication  
**EP 3165622 A1 20170510 (FR)**

Application  
**EP 16189866 A 20160921**

Priority  
EP 15193182 A 20151105

Abstract (en)  
[origin: CN106676368A] A method for manufacturing a gold alloy wire is provided. The method includes preparing an alloy comprising 33.33-45.83% of Au, 3.64-12.44% of Zn, 18.46-45.02% of Cu, 9.88-33.78% of Ni, and 0.0-5.0% of an element selected from Ir, In, Ti, Si, Ga and Re; manufacturing a continuous casting rod the diameter of which is 8.0-20.0 mm; subjecting the rod to wire rod rolling by limiting the deformation of the section to less than 20% per pass, preferably 13%; measuring the cumulative deformation with respect to the initial section; stopping the wire rod rolling when the cumulative deformation reaches 60% to 75%; annealing; performing wire rod rolling again and repeating wire rod rolling, measurement and annealing until the cross section reaches a required cross section; and drawing an intermediate product to obtain a fracture-surface wire having a round cross section.

Abstract (fr)  
Procédé de fabrication d'un fil en alliage d'or: - on compose un alliage comportant de 33,33% à 45,83% d'Au, de 3,64% à 12,44% de Zn, de 18,46% à 45,02% de Cu, de 9,88% et 33,78 % de Ni, et de 0,0 à 5,0% d'éléments parmi Ir, In, Ti, Si, Ga, Re, - on coule en continu une barre, de diamètre de 8,0 à 20,0 mm, - on lamine au fil ladite barre en limitant la déformation de la section à moins de 20% par passe, préférentiellement 13%, - on mesure la déformation cumulée par rapport à la section initiale, - on cesse le laminage au fil quand la déformation cumulée atteint 60% à 75%, on effectue un recuit, - on reprend le laminage au fil et on réitère le processus de laminage au fil, de mesure, et de recuit jusqu'à l'atteinte de la section souhaitée, - on étire le produit intermédiaire pour obtenir un fil profilé de section circulaire.

IPC 8 full level  
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**B21B 1/16** (2013.01 - US); **B21B 3/00** (2013.01 - US); **C22C 5/02** (2013.01 - CN EP US); **C22C 5/04** (2013.01 - RU); **C22C 9/00** (2013.01 - CN); **C22C 30/02** (2013.01 - CN EP US); **C22C 30/06** (2013.01 - CN); **C22F 1/08** (2013.01 - CN); **C22F 1/14** (2013.01 - CN EP RU US); **C22F 1/16** (2013.01 - CN); **G04B 19/042** (2013.01 - EP); **G04B 19/12** (2013.01 - EP); **C22C 9/00** (2013.01 - EP US)

Citation (applicant)  
"A facile chemical screening method for the détection of stress corrosion cracking in 9 carat gold alloys", GOLD BULLETIN, vol. 42, no. 3, 2009

Citation (search report)  
• [A] GB 1228716 A 19710415  
• [A] EP 2045343 A1 20090408 - LEGOR GROUP S R L [IT]  
• [A] US 1577995 A 19260323 - MERRIMAN WISE EDMUND  
• [A] AT 214156 B 19610327 - BRELLIER EDMOND, et al  
• [A] GREG NORMANDEAU ET AL: "White golds: A question of compromises", GOLD BULLETIN, vol. 27, no. 3, 1 September 1994 (1994-09-01), London, UK, pages 70 - 86, XP055270088, ISSN: 0017-1557, DOI: 10.1007/BF03214730  
• [A] NIELSEN JOHN P ET AL: "Castability characterization of gold jewelry alloys", PRECIOUS MET. / PRECIOUS MET., PROC. INT. PRECIOUS MET. INST. CONF., 8TH, 1985, MEETING DATE 1984, 117-29. EDITOR(S): MOHIDE, THOMAS PATRIC. PUBLISHER: INT. PRECIOUS MET. INST., ALLENTOWN, PA. CODEN: 55CIAW, 1 January 1984 (1984-01-01), pages 117 - 129, XP009189895  
• [AD] B. NEUMEYER ET AL: "A facile chemical screening method for the detection of stress corrosion cracking in 9 carat gold alloys", GOLD BULLETIN, vol. 42, no. 3, 1 September 2009 (2009-09-01), London, UK, pages 209 - 214, XP055270079, ISSN: 0017-1557, DOI: 10.1007/BF03214936  
• [A] OLGA V. SHULGA ET AL: "Preparation and Characterization of Porous Gold and Its Application as a Platform for Immobilization of Acetylcholine Esterase", CHEMISTRY OF MATERIALS, vol. 19, no. 16, 17 July 2007 (2007-07-17), US, pages 3902 - 3911, XP055270086, ISSN: 0897-4756, DOI: 10.1021/cm070238n

Cited by  
CN111321316A; CN115011841A

Designated contracting state (EPC)  
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Designated extension state (EPC)  
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DOCDB simple family (publication)  
**EP 3165621 A1 20170510**; CN 106676368 A 20170517; CN 106676368 B 20180918; EP 3165622 A1 20170510; EP 3165622 B1 20190313; JP 2017089002 A 20170525; JP 6263245 B2 20180117; RU 2016143464 A 20180504; RU 2016143464 A3 20200228; RU 2720374 C2 20200429; US 10471486 B2 20191112; US 2017128992 A1 20170511

DOCDB simple family (application)  
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