

Title (en)
THERMO-MECHANICAL TREATED LEAD ALLOYS

Title (de)
THERMOMECHANISCH BEHANDELTE BLEILEGIERUNGEN

Title (fr)
ALLIAGES DE PLOMB TRAITES DE MANIERE THERMO-MECANIQUE

Publication
EP 1461470 A4 20050914 (EN)

Application
EP 01989121 A 20011126

Priority
US 0144061 W 20011126

Abstract (en)
[origin: CA2468022A1] Recrystallized lead and lead alloy positive current collectors and connectors such as straps and lugs for use e.g. in lead acid batteries and electrowinning anodes, having an increased percentage of special grain boundaries in at least part of the microstructure, which have been provided by a process comprising of (i) cold or hot rolling or cold or hot extrusion or (ii) steps of deforming the lead or lead alloy, and subsequently annealing the lead or lead alloy. Either a single cycle of working and annealing can be provided, or a plurality of such cycles can be provided. The amount of deformation, the recrystallization time and temperature, and the number of repetitions of such steps are selected to ensure that a substantial increase in the population of special grain boundaries is provided in the microstructure, to improve resistance to creep, intergranular corrosion and intergranular cracking of the current collectors and connectors during battery service, and result in extended battery life and the opportunity to reduce the size and weight of the battery.

IPC 1-7
C22F 1/12; **C22C 11/00**; **C22C 11/06**; **H01M 4/68**

IPC 8 full level
C22C 11/06 (2006.01); **C22F 1/00** (2006.01); **C22F 1/12** (2006.01); **H01M 4/68** (2006.01)

CPC (source: EP KR)
C22C 11/00 (2013.01 - KR); **C22F 1/12** (2013.01 - KR); **Y02E 60/10** (2013.01 - EP)

Citation (search report)
• [XD] WO 0126171 A1 20010412 - INTEGRAN TECHNOLOGIES INC [CA]
• [AD] US 5462109 A 19951031 - VINCZE ALBERT M [CA], et al
• [A] US 6180286 B1 20010130 - RAO PURUSHOTHAMA [US], et al
• [A] US 6086691 A 20000711 - LEHOCKEY EDWARD M [CA], et al
• [A] WO 0060677 A1 20001012 - GNB TECH INC [US]

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AU 2002243237 A1 20030610; BR 0117183 A 20041103; CA 2468022 A1 20030605; EP 1461470 A2 20040929; EP 1461470 A4 20050914; JP 2005510628 A 20050421; KR 20040066847 A 20040727; MX PA04004943 A 20050408

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