

Title (en)
METHODS AND APPARATUS FOR REDUCING SULFUR IMPURITIES AND IMPROVING CURRENT EFFICIENCIES OF INERT ANODE ALUMINIUM PRODUCTION CELLS

Title (de)
VERFAHREN UND VORRICHTUNG ZUR VERMINDERUNG VON SULFUR VERUNREINIGUNGEN UND VERBESSERUNG DER STROMLEISTUNG IN ALUMINIUM-ELEKTROLYSEZELLEN MIT INERTEN ANODEN

Title (fr)
PROCEDES ET DISPOSITIF PERMETTANT DE REDUIRE LES IMPURETES A BASE DE SOUFRE ET D'AMELIORER LES RENDEMENTS EN COURANT DE CELLULES DE PRODUCTION D'ALUMINIUM A ANODE PERMANENTE

Publication
EP 1534879 A1 20050601 (EN)

Application
EP 02807650 A 20020805

Priority
US 0224780 W 20020805

Abstract (en)
[origin: WO2004013380A1] Methods and apparatus are disclosed for reducing sulfur impurities in aluminum electrolytic production cells (10, 20, 30, 40, 50) in order to significantly increase current efficiency of the cells. An impurity reduction zone may be created in the bath (13) of an inert anode (16a, 16b) cell by submerging a purifying electrode (17, 37, 47) in the bath (13). In another embodiment, an oxygen barrier tube (52), may be disposed in a portion of the bath (13). In a further embodiment, reductants such as aluminum, CO and/or CO₂ are added to the bath (13). In another embodiment, electrode current is interrupted or electrodes are removed from selected regions of the cell (10, 20, 30, 40, 50) in order to allow gaseous impurities to escape from the bath (13). Sulfur impurity levels may also be reduced in inert anode cells (62) by scrubbing bath emissions (66) from the cell (62) before they are reintroduced into the cell (62), and by controlling sulfur impurity contents of materials (82) added to the cell (62).

IPC 1-7
C25C 3/06

IPC 8 full level
C25C 3/06 (2006.01)

CPC (source: EP NO)
C25C 3/06 (2013.01 - EP NO)

Citation (search report)
See references of WO 2004013380A1

Designated contracting state (EPC)
DE FR IT

DOCDB simple family (publication)
WO 2004013380 A1 20040212; AU 2002332463 A1 20040223; AU 2002332463 B2 20080626; BR 0215834 A 20050607; BR 0215834 B1 20130219; CA 2495162 A1 20040212; CA 2495162 C 20100727; CN 100430523 C 20081105; CN 1659313 A 20050824; EP 1534879 A1 20050601; EP 1534879 B1 20160928; NO 20051171 L 20050503; NO 344248 B1 20191021

DOCDB simple family (application)
US 0224780 W 20020805; AU 2002332463 A 20020805; BR 0215834 A 20020805; CA 2495162 A 20020805; CN 02829530 A 20020805; EP 02807650 A 20020805; NO 20051171 A 20050304