

Title (en)  
DEVICE AND METHOD TO CONTROL STEEL PICKLING PROCESSES

Title (de)  
VORRICHTUNG UND VERFAHREN ZUR REGELUNG VON STAHLBEIZEN

Title (fr)  
DISPOSITIF ET PROCEDE DE CONTROLE DES PROCESSUS DE DECAPAGE DE L'ACIER

Publication  
**EP 1141686 B1 20060222 (EN)**

Application  
**EP 99961037 A 19991202**

Priority  
• EP 9909367 W 19991202  
• IT MI982612 A 19981202

Abstract (en)  
[origin: WO0033061A1] A device and a method to control pickling processes are described, where the control device comprises means (C) to take a sample of the bath to be analysed; means (CA, D, EM) to analyse said sample in order to measure a number of parameters according to specific conductivity and potentiometric methodologies as well as the redox potential value of said samples and its temperature; restoring means, apt to calculate, according to the above measured values, the quantity of corrective chemicals to be added to the pickling bath in order to restore at the desired level the value of said parameters and to actuate at least a device to add into said pickling bath necessary quantities of correction chemicals. The parameters measured according to conductivity methodologies are the concentrations of sulphuric acid, of hydrofluoric acid, or of another inorganic acid; the parameters measured according to potentiometric methodologies are concentrations of bivalent and trivalent iron ions and of hydrogen peroxide and the corrective chemicals are sulphuric acid, hydrofluoric agent and an oxidising agent.

IPC 8 full level  
**G01N 27/06** (2006.01); **G01N 27/26** (2006.01); **C23G 1/02** (2006.01); **C23G 1/08** (2006.01); **C23G 3/00** (2006.01); **G01N 27/10** (2006.01); **G01N 27/30** (2006.01); **G01N 27/401** (2006.01); **G01N 27/416** (2006.01); **G01N 33/20** (2006.01)

CPC (source: EP)  
**C23G 1/02** (2013.01)

Cited by  
DE102021212879A1; DE102020208769A1; WO2022012722A1; WO2013113811A1

Designated contracting state (EPC)  
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

DOCDB simple family (publication)  
**WO 0033061 A1 20000608**; AT E318408 T1 20060315; CA 2353387 A1 20000608; DE 69930001 D1 20060427; DE 69930001 T2 20060824; EP 1141686 A1 20011010; EP 1141686 B1 20060222; ES 2258863 T3 20060901; IT 1303814 B1 20010223; IT MI982612 A1 20000602; JP 2002531700 A 20020924; MX PA01005464 A 20020702

DOCDB simple family (application)  
**EP 9909367 W 19991202**; AT 99961037 T 19991202; CA 2353387 A 19991202; DE 69930001 T 19991202; EP 99961037 A 19991202; ES 99961037 T 19991202; IT MI982612 A 19981202; JP 2000585647 A 19991202; MX PA01005464 A 19991202