Title (en)

METHOD AND DEVICE FOR HOT-DIP COATING A METAL STRAND

Title (de)

VERFAHREN UND VORRICHTUNG ZUR SCHMELZTAUCHBESCHICHTUNG EINES METALLSTRANGES

Title (fr)

PROCEDE ET DISPOSITIF DE REVETEMENT D'UNE BARRE METALLIQUE PAR IMMERSION A CHAUD

Publication

EP 1565590 B1 20060426 (DE)

Application

EP 03772340 A 20031115

Priority

- DE 10255994 A 20021130
- EP 0312792 W 20031115

Abstract (en)

[origin: CA2509219A1] The invention relates to a method for hot-dip coating a metal strand (1), especially a steel strip, according to which the metal strand (1) is vertically guided through a container (3) accommodating the molten coating metal (2) and through a guide channel (4) disposed upstream thereof. An electromagnetic field is generated in the area of the guide channel (4) by means of at least two inductors (5) disposed at both sides of the metal stra nd (1) to retain the coating material (2) in the container (3). In order to stabilize the metal strand (1) in a center position in the guide channel (4) , an electromagnetic field, superimposing the electromagnetic field of the inductors (5), is generated by means of at least two additional coils (6) disposed at both sides of the metal strand (1). In order to improve efficien cy of the control of the metal strand in the guide channel, the center position of the metal strand (1) in the guide channel (4) is stabilized in a closed control loop by carrying out the following steps: a) detecting the position (s, s', s'') of the metal strand (1) in the guide channel (4); b) measuring the induced current (IInd) in the inductors (5); c) measuring the induced current (ICorr) in the additional coils (6); d) influencing the induced current (ICorr) in the additional coils(6) depending on the parameters (s, IInd, ICorr) measured in steps a) to c), in order to maintain the metal stra nd (1) in a center position in the guide channel (4). The invention further relates to a device for hot-dip coating a metal strand.

IPC 8 full level

C23C 2/00 (2006.01); **C23C 2/24** (2006.01); **C23C 2/36** (2006.01); **C23C 2/40** (2006.01)

CPC (source: EP KR US)

C23C 2/06 (2013.01 - KR); **C23C 2/12** (2013.01 - KR); **C23C 2/24** (2013.01 - EP KR US); **C23C 2/40** (2013.01 - KR); **C23C 2/52** (2022.08 - KR)

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PT RO SE SI SK TR

DOCDB simple family (publication)

DE 10255994 A1 20040609; AT E324472 T1 20060515; AU 2003279393 A1 20040623; AU 2003279393 B2 20090108; AU 2003279393 B8 20090122; BR 0316814 A 20051018; BR 0316814 B1 20121127; CA 2509219 A1 20040617; CA 2509219 C 20110201; CN 1717505 A 20060104; CN 1717505 B 20120718; DE 50303140 D1 20060601; EG 23676 A 20070415; EP 1565590 A2 20050824; EP 1565590 B1 20060426; ES 2260666 T3 20061101; JP 2006508245 A 20060309; JP 4431050 B2 20100310; KR 101013916 B1 20110214; KR 20050085183 A 20050829; MX PA05005724 A 20050816; MY 135134 A 20080229; PL 208243 B1 20110429; PL 375556 A1 20051128; RS 20050412 A 20070803; RS 50774 B 20100831; RU 2005120687 A 20060120; RU 2329332 C2 20080720; TW 200417625 A 20040916; TW I345594 B 20110721; UA 79175 C2 20070525; US 2006141166 A1 20060629; US 2010112238 A1 20100506; US 7662438 B2 20100216; WO 2004050940 A2 20040617; WO 2004050940 A3 20041229; ZA 200502990 B 20051020

DOCDB simple family (application)

DE 10255994 A 20021130; AT 03772340 T 20031115; AU 2003279393 A 20031115; BR 0316814 A 20031115; CA 2509219 A 20031115; CN 200380104585 A 20031115; DE 50303140 T 20031115; EG NA2005000263 A 20050529; EP 0312792 W 20031115; EP 03772340 A 20031115; ES 03772340 T 20031115; JP 2004556145 A 20031115; KR 20057009604 A 20031115; MX PA05005724 A 20031115; MY PI20034525 A 20031124; PL 37555603 A 20031115; RU 2005120687 A 20031115; TW 92131445 A 20031111; UA 2005006371 A 20031115; US 53687203 A 20031115; US 58948009 A 20091024; YU P20050412 A 20031115; ZA 200502990 A 20050413