

Title (en)

Roller body for a roller for processing a material and method for producing a roller body

Title (de)

Walzenkörper für eine Walze zur Behandlung eines Materials und Verfahren zur Herstellung eines Walzenkörpers

Title (fr)

Corps de cylindre pour un cylindre destiné au traitement d'un matériau et procédé de fabrication d'un corps de cylindre

Publication

EP 2213790 A1 20100804 (DE)

Application

EP 10150614 A 20100113

Priority

DE 102009004562 A 20090114

Abstract (en)

The roller body (1) for a roller for the treatment of web material, where the web material is poured from an iron based alloy and forms a radial interior zone of the roller body from gray cast iron, and a circumferential fringe containing the external circumference of the roller body around the interior zone, with a surface hardness of greater than 400 HV is claimed. The circumferential fringe consists of fine- or finely-striped perlite with spherical graphite or vermicular graphite, or from bainite with spherical graphite or vermicular graphite. The roller body (1) for a roller for the treatment of web material, where the web material is poured from an iron based alloy and forms a radial interior zone of the roller body from gray cast iron, and a circumferential fringe containing the external circumference of the roller body around the interior zone, with a surface hardness of greater than 400 HV is claimed. The circumferential fringe consists of fine- or finely-striped perlite with spherical graphite or vermicular graphite, or from bainite with spherical graphite or vermicular graphite. The material of the circumferential fringe has a strength value such as 0.2% yield point of greater than 400 N/mm², a tensile strength of greater than 650 N/mm², and a breaking elongation of greater than 2%. The stored free graphite is spherical graphite and the graphite ball has a size in the hardened circumferential fringe, where the size corresponds to a coefficient of 7 according to EN ISO 945. The roller body has a hole (4) peripherally distributed around its central longitudinal axis for transporting a thermal fluid. The roller body is a component of the roller, where pin flanges (2, 3) are mounted on the axial ends of the roller body for mounting the roller. An independent claim is included for a method for producing a roller body.

Abstract (de)

Walzenkörper für eine Walze zur Behandlung eines Materials, vorzugsweise Bahnmaterials, der a) aus einer Eisenbasislegierung gegossen ist, b) die eine radiale innere Zone (5) des Walzenkörpers (1) aus grauem Gusseisen (GJS, GJV) und c) um die innere Zone (5) eine den äußeren Umfang des Walzenkörpers (1) enthaltende Umfangsrandzone (6) d) mit einer Oberflächenhärte größer als 400 HV bildet, e) wobei die Umfangsrandzone (6) aus fein- oder feinststreifigem Perlit (P) mit eingelagertem freien Graphit, vorzugsweise Kugelgraphit (SG) oder Vermikulargraphit (V), oder aus einem Zwischenstufengefüge (ADI) mit Kugelgraphit oder Vermikulargraphit besteht.

IPC 8 full level

C21D 5/00 (2006.01); **C21D 5/02** (2006.01); **C21D 9/38** (2006.01); **C22C 37/04** (2006.01); **C22C 37/08** (2006.01); **D21F 3/00** (2006.01); **D21F 3/08** (2006.01); **D21G 1/00** (2006.01); **D21G 1/02** (2006.01)

CPC (source: EP US)

C21D 5/00 (2013.01 - EP US); **C21D 9/38** (2013.01 - EP US); **C22C 37/04** (2013.01 - EP US); **D21F 3/08** (2013.01 - EP US); **D21G 1/0246** (2013.01 - EP US)

Citation (applicant)

- EP 0505343 A1 19920923 - VALMET PAPER MACHINERY INC [FI]
- DE 69219808 T2 19971023 - VALMET CORP [FI]
- WO 2006072663 A2 20060713 - METSO PAPER INC [FI], et al
- DE 69230413 T2 20000525 - S D WARREN CO [US]

Citation (search report)

- [XY] DE 69219808 T2 19971023 - VALMET CORP [FI]
- [Y] WO 2006072663 A2 20060713 - METSO PAPER INC [FI], et al
- [Y] EP 0710741 B1 19991208 - WARREN S D CO [US]
- [A] US 2006037675 A1 20060223 - LABBE DANIEL [FR]

Cited by

EP2474665A1; CN106367671A; EP2386660A1; US2010179039A1; US8684895B2; CN111168030A; US10240291B2; WO2016012214A1; WO2018072770A1; WO2017016810A1

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK SM TR

DOCDB simple family (publication)

EP 2213790 A1 20100804; **EP 2213790 B1 20130703**; DE 102009004562 A1 20100715; DE 102009004562 B4 20150603; US 2010179039 A1 20100715; US 8684895 B2 20140401

DOCDB simple family (application)

EP 10150614 A 20100113; DE 102009004562 A 20090114; US 68670010 A 20100113