Title (en)

DEVICE FOR CASTING STRANDS OF METAL

Title (de)

VORRICHTUNG ZUM GIESSEN VON STRÄNGEN AUS METALL

Title (fr)

DISPOSITIF CONÇU POUR COULER DES BARRES DE MÉTAL

Publication

EP 2129481 A1 20091209 (DE)

Application

EP 08706736 A 20080108

Priority

- DE 2008000031 W 20080108
- DE 102007010578 A 20070226

Abstract (en)

[origin: DE102007010578A1] The return rollers of the belt have a convex, barrel shape. The barrel profile is designed to compensate the trough profile formed in the upper strand of the belt. Mathematical formulae used to quantify the barrel profile for such compensation, are provided. Length variation in the belt, caused by the varied transverse temperature distribution, is also taken into consideration. The temperature distribution causes thermal expansion, which is quantified using a further mathematical expression. A process of superposition is used to calculate the optimal barrel profile for uniform tensile stressing over the width of the belt. This is produced in terms of a given trough profile and temperature profile. The trough profile determines the casting format. The barrel profile of the first return roller is less pronounced than that of the second return roller. At least one of these profiles is variable e.g. by use of a pressure medium. A profiled roller cavity is used to apply pressure to the roller casing. The entry- or outlet length is at least 500 mm; its maximum value is selected such that the degree of barreling appropriate to the trough profile, is no more than 2%. Over an interval Le(a), the band is formed continuously by the return roller into the trough profile, or to the flat belt form. The belt is a thermal shock-resistant alloy with a copper-nickel iron basis. It is a single- or multi-phase copper alloy. It is alternatively a nickel based alloy. Belt thickness is 0.5-2 mm. The trough profile has a curved run. It is symmetrical. There are largely straight regions at both ends. The sides of the trough profile are at least 10 mm higher than the cast profile. The departure between the side angles and vertical is +- 25[deg] . Over its length, the trough profile is matched with the shrinkage of the casting cross section, by intentional adjustment of the rollers.

IPC 8 full level

B22D 11/06 (2006.01)

CPC (source: EP KR US)

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Citation (search report)

See references of WO 2008104143A1

Cited by

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DOCDB simple family (publication)

DE 102007010578 A1 20080828; CA 2677962 A1 20080904; CA 2677962 C 20120717; CN 101622087 A 20100106; EP 2129481 A1 20091209; JP 2010519046 A 20100603; JP 5289334 B2 20130911; KR 101135509 B1 20120413; KR 20090114395 A 20091103; US 2011000636 A1 20110106; WO 2008104143 A1 20080904

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