

Title (en)

METHOD AND DEVICE FOR REDUCING SCALE FORMATION DURING HOT FORMING OF METAL, IN PARTICULAR STEEL

Title (de)

VERFAHREN UND VORRICHTUNG ZUR VERMINDERUNG DER ZUNDERBILDUNG BEIM WARMUMFORMEN VON METALL, INSBESONDERE VON STAHL

Title (fr)

PROCEDE ET DISPOSITIF VISANT A REDUIRE LA FORMATION DE CALAMINE LORS DU FORMAGE A CHAUD DE METAL, NOTAMMENT DE L'ACIER

Publication

**EP 0630295 B1 19960605 (DE)**

Application

**EP 93905334 A 19930310**

Priority

- DE 4208208 A 19920314
- EP 9300545 W 19930310

Abstract (en)

[origin: DE4208208A1] The invention concerns a process for reducing scale formation during hot forming of metal, in particular steel. The metal, which is formed in its heated state and under brief high pressure, the deformation being substantially plastic, is subjected during a subsequent stress-relief phase, during which the degree of plastic deformation is reduced, to treatment with an inert gas such as nitrogen. In a device for carrying out the process, a device for supplying inert gas is connected to the device used for hot forming the metal; the former has a large number of jets directed towards the formed metal as well as a system for restricting the supply of inert gas, after the metal has been formed, to the stress-relief phase. In the hot-rolling of steel, for example, inert gas jets are arranged at the output end of a roll stand in such a way that the inert gas is blown obliquely against the direction of feed of the steel into the space created around the formed metal between the output end sections of the last roll housing and the open spaces of the roll gap at the sides of the formed metal. An inert gas pressure higher than the atmospheric pressure thus builds up in the said space.

IPC 1-7

**B21B 9/00**

IPC 8 full level

**B21B 9/00** (2006.01); **B21C 43/04** (2006.01); **C21D 7/13** (2006.01); **C21D 1/74** (2006.01)

CPC (source: EP)

**B21B 9/00** (2013.01); **B21C 29/006** (2013.01); **B21C 43/04** (2013.01); **C21D 7/13** (2013.01); **C21D 1/74** (2013.01)

Cited by

DE19936010B4

Designated contracting state (EPC)

BE DE ES FR GB IT NL

DOCDB simple family (publication)

**DE 4208208 A1 19930916**; **DE 4208208 C2 19941215**; AU 3632293 A 19931021; CN 1078179 A 19931110; DE 59302830 D1 19960711; EP 0630295 A1 19941228; EP 0630295 B1 19960605; ES 2088276 T3 19960801; PL 170068 B1 19961031; TW 227019 B 19940721; WO 9318869 A1 19930930; ZA 931765 B 19930927

DOCDB simple family (application)

**DE 4208208 A 19920314**; AU 3632293 A 19930310; CN 93103128 A 19930315; DE 59302830 T 19930310; EP 9300545 W 19930310; EP 93905334 A 19930310; ES 93905334 T 19930310; PL 30131593 A 19930310; TW 82102212 A 19930324; ZA 931765 A 19930312