

Title (en)  
PERMANENT-MAGNETIC HYDRODYNAMIC METHODS AND APPARATUS FOR STABILIZING CONTINUOUS CASTING BELTS

Title (de)  
DAUERMAGNETISCHE HYDRODYNAMISCHE VERFAHREN UND VORRICHTUNG ZUR STABILISIERUNG VON KONTINUIERLICHEN GIESSBÄNDE

Title (fr)  
METHODES ET APPAREIL HYDRODYNAMIQUES A MAGNETISME PERMANENT DESTINES A STABILISER LES TAPIS DE COULEE CONTINUS

Publication  
**EP 0912273 A4 20001122 (EN)**

Application  
**EP 97934873 A 19970701**

Priority  
• US 9711507 W 19970701  
• US 67795396 A 19960710  
• US 88509297 A 19970630

Abstract (en)  
[origin: WO9801247A1] Permanent-magnetic hydrodynamic methods and apparatus stabilize a moving, flexible, thin-gauge, heat-conducting, magnetically soft ferromagnetic casting belt (50) against thermal distortion while moving along a mold cavity (C) being heated at its front surface by heat coming from molten metal being cast while being cooled at its reversed surfaces by flowing pumped liquid coolant. Hydro-magnetic devices (38) are arranged in an array (51) wherein flows of pumped coolant (93) pass through fixedly throttling passageways (90) feeding pressure pockets facing the belt's reverse surface. These pockets are shown rimmed by magnetic pole faces (34). Coolant issues from the pressure pockets as fast-moving films to cool the belt's reverse surface and levitate the belt spaced from the pole faces while the belt is stabilized in even condition by powerful reach-out magnetic attraction forces.

IPC 1-7  
**B22D 11/06**; **B22D 11/124**

IPC 8 full level  
**B22D 11/06** (2006.01); **B22D 11/124** (2006.01)

CPC (source: EP)  
**B22D 11/0677** (2013.01); **B22D 11/0685** (2013.01)

Citation (search report)  
• [A] CH 608731 A5 19790131 - ALCAN RES & DEV [CA]  
• [A] FR 2382297 A1 19780929 - LAREX AG [CH]  
• [A] PATENT ABSTRACTS OF JAPAN vol. 013, no. 535 (M - 899) 29 November 1989 (1989-11-29)  
• [A] PATENT ABSTRACTS OF JAPAN vol. 009, no. 094 (M - 374) 24 April 1985 (1985-04-24)

Cited by  
EP1777021A1

Designated contracting state (EPC)  
AT BE CH DE ES FI FR GB IE IT LI NL SE

DOCDB simple family (publication)  
**WO 9801247 A1 19980115**; AT E237418 T1 20030515; BR 9710159 A 20000111; CA 2259685 A1 19980115; CA 2259685 C 20060110; CN 1146483 C 20040421; CN 1229373 A 19990922; DE 69720997 D1 20030522; DE 69720997 T2 20040212; EP 0912273 A1 19990506; EP 0912273 A4 20001122; EP 0912273 B1 20030416; ES 2196351 T3 20031216; JP 2002515830 A 20020528

DOCDB simple family (application)  
**US 9711507 W 19970701**; AT 97934873 T 19970701; BR 9710159 A 19970701; CA 2259685 A 19970701; CN 97197701 A 19970701; DE 69720997 T 19970701; EP 97934873 A 19970701; ES 97934873 T 19970701; JP 50526498 A 19970701