

Title (en)
ELECTROMAGNETIC COIL DEVICE FOR USE OF IN-MOLD MOLTEN STEEL CAPABLE OF SERVING BOTH AS ELECTROMAGNETIC STIR
AND ELECTROMAGNETIC BRAKE

Title (de)
ELEKTROMAGNETISCHE SPULENVORRICHTUNG ZUR VERWENDUNG BEI IN DER FORM GESCHMOLZENEM STAHL, DIE SOWOHL ALS
ELEKTROMAGNETISCHE RÜHRVORRICHTUNG ALS AUCH ALS ELEKTROMAGNETISCHE BREMSE DIENEN KANN

Title (fr)
DISPOSITIF À BOBINE ÉLECTROMAGNÉTIQUE POUR ACIER FONDU EN MOULE, AYANT À LA FOIS UN EFFET DE BRASSAGE ET DE
FREIN ÉLECTROMAGNÉTIQUE

Publication
EP 2218528 B1 20150624 (EN)

Application
EP 08848743 A 20081010

Priority
• JP 2008068486 W 20081010
• JP 2007298484 A 20071116

Abstract (en)
[origin: EP2218528A1] PROBLEM: To optimize the relationship between the inner and outer windings of a multi-function coil. MEANS: An electromagnetic coil system for continuous casting of steel configured to selectively activate electromagnetic stirring and electromagnetic braking of molten steel by applying a direct current or at least a 3-phase alternating current to an electromagnetic coil. The electromagnetic coil is provided with two teeth 1aa extending from yoke 1ab. An inner winding 1b is provided around the two teeth 1aa, and an outer winding 1c is further provided around the outside. A number of coil turns of the outer winding 1c is equal to a number of coil turns -of the inner winding 1b, if the number of coil turns of the inner winding 1b is sufficient. The number of coil turns of the outer winding 1c is greater than the number of coil turns of the inner winding 1b and no more than 2.5 times the number of coil turns of the inner winding 1b, if the number of coil turns of the inner winding 1b is insufficient. The electromagnetic coil is arranged so that there are n coils disposed on each wide side 1a, where n is a natural number greater than or equal to 2, and the core 1a of a magnetic material is disposed in a range extending in a vertical direction from a position of the meniscus and including an outlet port of immersion nozzle 4. ADVANTAGEOUS EFFECT: Sufficient stirring performance and braking performance can be ensured, even if the inner winding does not have the necessary number of coil turns.

IPC 8 full level
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CPC (source: EP)
B22D 11/115 (2013.01); **H01F 3/00** (2013.01); **H01F 7/20** (2013.01)

Cited by
CN105014029A; CN106466708A; EP2808103A4; US10207318B2; WO2016078718A1

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