

Title (en)
METHOD AND APPARATUS FOR ELECTROMAGNETIC CONFINEMENT OF MOLTEN METAL

Title (de)
VERFAHREN UND VORRICHTUNG ZUM ELEKTROMAGNETISCHEN EINDÄMMEN SCHMELZFLÜSSIGER METALLE

Title (fr)
PROCEDE ET APPAREIL POUR LE CONFINEMENT ELECTROMAGNETIQUE DE METAL EN FUSION

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Application
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Abstract (en)
[origin: WO9836861A1] A method and apparatus for electromagnetic confinement of molten metal during strip casting of molten metal between two belts that wrap around entry pulleys to create a molding zone. The molten metal is delivered to a curved surface of each belt to form strip metal. The molten metal is contained within the molding zone by a pair of edge containment devices. The edge containment devices have a C-shaped magnetic member with an upper pole having an upper pole face and a lower pole face. Current flows through a coil wrapped around a core region of the magnetic member to create magnetic lines of force that flow between the upper pole face and the lower pole face. The C-shaped magnetic member is positioned such that magnetic lines of force pass through the edges of the two belts and the molten metal, and keep the molten metal within the molding zone. According to the present invention, the pole faces can have a positive angle, a negative angle, no angle relative to a horizontal, or a combination thereof. The pole faces have a curved shape to maintain a constant distance between the pole faces and the edges of the two belts. The magnetic member can be formed from a series of bonded elements, a series of elements mechanically held together, or from a solid core. In a particular embodiment, the magnetic member comprises two halves which are removably attached to the core to facilitate replacement of the coil wrapped around the core region.

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