

Title (en)
METHOD AND DEVICES FOR REGULATING THE FLOW RATE AND FOR SLOWING DOWN NON-FERROMAGNETIC, ELECTRICALLY-CONDUCTING LIQUIDS AND MELTS

Title (de)
VERFAHREN UND VORRICHTUNGEN ZUR REGELUNG DER STRÖMUNGSGESCHWINDIGKEIT UND ZUM ABBREMSEN VON NICHTFERROMAGNETISCHEN, ELEKTRISCH LEITFÄHIGEN FLÜSSIGKEITEN UND SCHMELZEN

Title (fr)
PROCÉDÉS ET DISPOSITIFS POUR LA RÉGULATION DE LA VITESSE D'ÉCOULEMENT ET POUR LE RALENTISSEMENT DE LIQUIDES ET MATIÈRES EN FUSION ÉLECTROCONDUCTEURS NON FERROMAGNÉTIQUES

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Abstract (en)
[origin: WO2010015679A1] The invention relates to a method for regulating the flow rate and for slowing down non-ferromagnetic, electrically conducting liquids and melt streams through magnetic fields, in particular in the tapping of metallurgical containers such as blast furnaces and melt furnaces. The method is characterized in that the melt stream is routed in a closed routing element using at least one stationary magnetic field with a constant polarity, at least one stationary magnetic alternating field or using a multi-poled magnetic travelling field, in such a way that the magnetic field lines transversally penetrate the melt flow across the entire cross section thereof and such that a voltage is induced in the melt stream by the magnetic fields, there being eddy currents induced thereby in the melt stream that are disposed radially and axially when a stationary magnetic field of constant polarity is used and that are disposed axially when a stationary alternating magnetic field or an electromagnetic travelling field is used, and that due to the interactions between the magnetic fields and the eddy currents forces are generated that can affect the flow rate of the melt stream.

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