Title (en)

APPARATUS FOR CONTINUOUS HOT-DIP COATING OF METAL STRIP

Title (de)

VORRICHTUNG ZUM KONTINUIERLICHEN SCHMELZTAUCHBESCHICHTEN VON METALLBAND

Title (fr)

DISPOSITIF DE REVÊTEMENT AU TREMPE À CHAUD ET EN CONTINU D'UNE BANDE MÉTALLIQUE

Publication

EP 2989226 B1 20170621 (DE)

Application

EP 14715025 A 20140404

Priority

- DE 102013104267 A 20130426
- EP 2014056828 W 20140404

Abstract (en)

[origin: DE102013104267B3] The device comprises a molten bath vessel (2) including an opening with a trunk part (6) for introducing a metal strip (5) into a molten metal bath (1), a deflection roller placed in the melting bath, an outlet chamber (11) immersed in the molten bath, an overflow wall outwardly bounded to a bottom side of the vessel so that an overflow edge of the overflow wall is arranged below molten level, a suction line with a pump connected with the outlet chamber, a passage opening provided in the outlet chamber for passing a liquid metal melt from the melting bath into the outlet chamber. The device comprises a molten bath vessel (2) including an opening with a trunk part (6) for introducing a metal strip (5) into a molten metal bath (1), a deflection roller placed in the melting bath in presence of an inert gas atmosphere in a melt-oriented direction, an outlet chamber (11) immersed in the molten bath, an overflow wall outwardly bounded to a bottom side of the molten bath vessel so that an overflow edge of the overflow wall is arranged below molten level, a suction line with a pump connected with the outlet chamber, a passage opening provided in the outlet chamber for passing a liquid metal melt from the melting bath into the outlet chamber, where the passage opening is arranged below the overflow edge. The overflow wall is in the form of a circulating frame with which the trunk part defined an annular space. The outlet chamber is provided with through holes through which the liquid metal melt from the molten bath is passed into the outlet chamber. The through holes at an angle for the overflow wall are obliquely relative to the plane or level of the overflow wall. The overflow edge of the overflow wall is rounded off in the overflow direction. A portion of the overflow wall is coated with a material additive. A return pipe is connected to the outlet chamber for passing the liquid metal melt from the molten bath into the outlet chamber. A positioning device is swingable and/or axial moveably supported in the molten bath vessel, where the positioning device includes a positioning element and a path sensor for detecting a layer alteration including a propensity alteration of the trunk part. A measuring unit is located in the molten bath vessel for measuring the molten bath level. A control unit controls the measurement unit for measuring the measurement signal of the path sensor and a measurement signal of the molten bath. A bottom part of the outlet chamber is arranged along a slope of the suction pipe. An optical camera is located in the molten bath vessel for observing the molten bath vessel. The outlet chamber is provided with a dip stick immersed in the molten bath vessel in the outlet chamber. A display device with a measuring probe is located at an end part of the molten bath, where the probe measures the height difference between the molten bath and the overflow edge.

IPC 8 full level

C23C 2/00 (2006.01); **B05C 3/12** (2006.01); **C23C 2/40** (2006.01)

CPC (source: EP US)

B05C 3/125 (2013.01 - EP US); **C23C 2/0034** (2022.08 - EP US); **C23C 2/00342** (2022.08 - EP US); **C23C 2/00344** (2022.08 - EP US); **C23C 2/004** (2022.08 - EP US); **C23C 2/40** (2013.01 - EP US); **C23C 2/51** (2022.08 - EP US); **C23C 2/523** (2022.08 - EP US)

Citation (opposition)

Opponent : Arcelor Mittal

- JP H0459955 A 19920226 - KAWASAKI STEEL CO
- WO 0238825 A1 20020516 - LORRAINE LAMINAGE [FR], et al
- WO 0238823 A1 20020516 - LORRAINE LAMINAGE [FR], et al

Cited by

WO2020224792A1

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