

## Title (en)

Device for cleaning a pocket tube for pouring liquid metal

## Title (de)

Reinigungsvorrichtung für Gießpfannenrohr zum Flüssigmetallguss

## Title (fr)

Dispositif de nettoyage d'un tube de poche pour coulée de métal liquide

## Publication

**EP 2191918 A1 20100602 (FR)**

## Application

**EP 08169513 A 20081120**

## Priority

EP 08169513 A 20081120

## Abstract (en)

The pocket tube cleaning device comprises a frame (12) having an undercut for supporting the tube and an opening (22) for injecting oxygen, a unit for supporting the tube, a unit for guiding the support unit between a loading position and a cleaning position in which the tube is placed in the undercut with a channel of according to the opening. The channel extends according to an axis, where the support unit holds the tube so that the channel axis is vertical. The support unit has a unit for suspension of tube through an inlet end corresponding to its upper end. The pocket tube cleaning device comprises a frame (12) having an undercut for supporting the tube and an opening (22) for injecting oxygen, a unit for supporting the tube, a unit for guiding the support unit between a loading position and a cleaning position in which the tube is placed in the undercut with a channel of according to the opening. The channel extends according to an axis, where the support unit holds the tube so that the channel axis is vertical. The support unit has a unit for suspension of tube through an inlet end corresponding to its upper end. The tube support unit comprises three pieces cooperating with complementary notches arranged on the tube near the inlet end. A cleaning piece (20) comprising a sharp edge is arranged at its inlet end for rubbing against a surface of the tube, while moving the tube or the support unit from the loading position to the cleaning position. The edge is linear, curved or point shaped. A unit is arranged for pushing the tube towards an injection element having an injection opening with the cleaning piece. The pushing unit comprises an elastic horizontal traction-compression unit e.g. a spring to exert pressure on a rocker piece for cooperating with a flange of normal tube corresponding to the direction of injection. The injection element comprises a groove rotating the opening on a curved surface towards the undercut. A unit is arranged for injecting fluid in the groove. A unit is arranged for controlling the activation unit. Independent claims are included for: (1) a pocket tube for an installation for casting the metal liquid; (2) a piece for a cleaning device; and (3) a process for cleaning the pocket tube.

## Abstract (fr)

La présente invention concerne un dispositif de nettoyage (10) d'un tube de poche (31) pour coulée de métal liquide, le tube de poche (31) comprenant un canal (33), le dispositif comprenant : - un bâti (12) présentant un dégagement (17) pour accueillir un tube (31) et un orifice (22) pour l'injection d'oxygène ; - des moyens de support (26) du tube ; - des moyens de guidage des moyens de support entre une position de chargement du tube et une position de nettoyage dans laquelle le tube (31) est mis en place dans le dégagement avec le canal (33) en regard de l'orifice (22).

## IPC 8 full level

**B22D 11/106** (2006.01); **B22D 41/50** (2006.01)

## CPC (source: EP)

**B22D 41/50** (2013.01)

## Citation (applicant)

JP H0825006 A 19960130 - NIPPON KOKAN KK, et al

## Citation (search report)

- [X] EP 0528724 A1 19930224 - LORRAINE LAMINAGE [FR]
- [X] JP H0825006 A 19960130 - NIPPON KOKAN KK, et al
- [X] JP H07232266 A 19950905 - NIPPON SPENG CO, et al
- [A] JP S57115968 A 19820719 - NISSHIN STEEL CO LTD
- [A] EP 0858851 A1 19980819 - SUMITOMO HEAVY INDUSTRIES [JP]
- [A] KR 20040021971 A 20040311 - POSCO

## Cited by

CN110280751A

## Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MT NL NO PL PT RO SE SI SK TR

## Designated extension state (EPC)

AL BA MK RS

## DOCDB simple family (publication)

**EP 2191918 A1 20100602**

## DOCDB simple family (application)

**EP 08169513 A 20081120**