

## Title (en)

APPARATUS AND METHOD FOR CONTINUOUS CASTING OF METALLIC STRANDS AT EXCEPTIONALLY HIGH SPEEDS USING OSCILLATING MOLD ASSEMBLY

## Publication

**EP 0042995 B1 19850515 (EN)**

## Application

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## Priority

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## Abstract (en)

[origin: EP0042995A1] An oscillating cooled mold assembly for the continuous high-speed casting of metallic strands, (12) especially upcasting strands of copper alloys such as brass, has a hollow die (112) in fluid communication with a melt (14) typically held in a casting furnace (16). coolerbody surrounds the die in a tight-fitting relationship to form a solidification front in the melt as it advances through the casting zone of the die. During assembly, the die is preferably slip fit in the coolerbody (103). A shoulder on the die engages a lower face of the coolerbody (103) and, together with a small irregularity on the upper coolerbody wall, prevents any axial movement of the die before it thermally expands against the coolerbody. An insulating member (118) located between the die and the coolerbody and below the solidification front fixes the location of the front within a dimensionally uniform area of the die. The insulating member is preferably a ring of a material such as casting silica that has a low coefficient of thermal expansion, a low porosity, and is highly resistant to thermal shock. The insulating member (118) also preferably creates a steep longitudinal temperature gradient at its upper end to promote a high cooling rate over a relatively short casting zone. An insulating hat encloses the coolerbody, allowing it to be immersed in the melt and preferably deeply immersed to a level above the casting zone. The strand or rod formed from the solidified melt is pulled through the die while the mold oscillates in a direction substantially parallel to the direction of travel of the rod.

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