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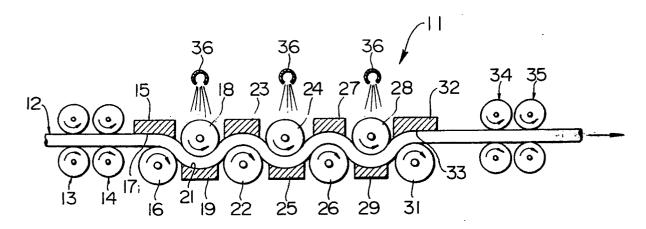
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- (A) Method of strengthening metal material and apparatus therefor.
- © A method of strengthening a metal material of a cast product consisting of a unidirectionally solidified structure of crystals extending long in a direction of casting, and an apparatus for realizing this method. The cast product (12) is passed through a zigzag path formed by contact with circumferential surfaces of rotatable rolls (16, 18, 22, 26, 28, 31), so that repeatedly bending deformation is applied to the

cast product to thereby harden the cast product. The repeatedly bending deformation grows dislocation in crystals of the cast product competitively, so that free movement in dislocation of crystals cannot be made any more. As a result of the growth competition of crystals, a strengthened metal material is obtained.

## FIG. I

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## EUROPEAN SEARCH REPORT

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		h indication, where appropriate,		elevant	CLASSIFICATION OF THE
Category	of rele	vant passages	t	o claim	APPLICATION (Int. CI.5)
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					TECHNICAL FIELDS
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