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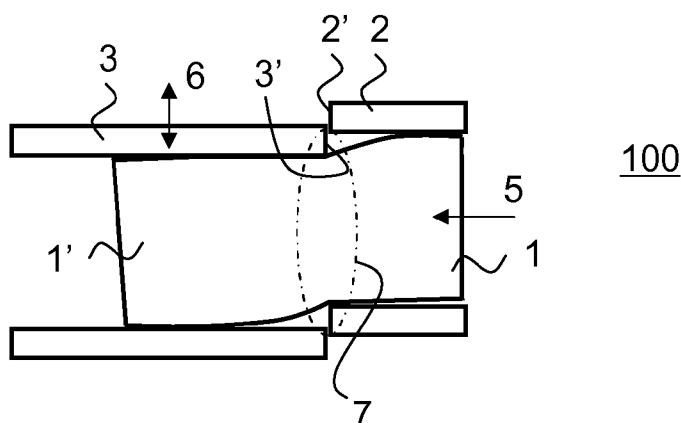


FIG. 4

(57) Abstract: A SPD process comprising deforming metal material (1) in an apparatus (100) which comprises a material flow-through channel (2, 3, 4) which is arranged in a first direction (5), and a press (3). The method comprises feeding metal material (1) in the first direction (5) so that the material need not be in a state of extreme stress, and pressing the material reciprocally by the press (3) in at least one second direction (6) which is crosswise relative to the first direction, and deforming grain size of the material smaller. An apparatus (100) for deforming metal material (1) to SPD material.

INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
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B. FIELDS SEARCHED
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Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
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C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 1 570 924 A1 (HORITA ZENJI [JP]; NAKAMURA KATSUAKI [JP]; NEISHI KOJI [JP]; NAGAKAKI) 7 September 2005 (2005-09-07) paragraphs [0018], [0113], [0148]; figure 9	1-20
A,P	RO 123 274 B1 (UNIV DUNAREA DE JOS DIN GALATI [RO]) 30 May 2011 (2011-05-30) cited in the application page 3, lines 34-36; figures 1-2	1,14

Further documents are listed in the continuation of Box C.

See patent family annex.

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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