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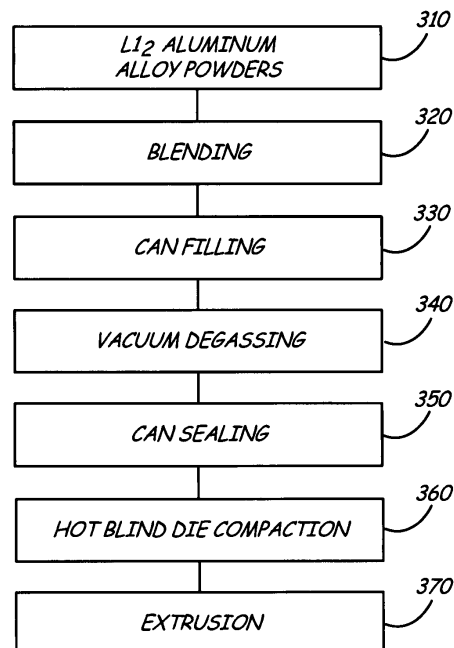
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(54) **Hot compaction and extrusion of L12 aluminum alloys**

(57) A method and apparatus produces high strength aluminum alloys from a powder containing L1<sub>2</sub> interme-

tallic dispersoids. The powder is degassed, sealed under vacuum in a container, consolidated by vacuum hot pressing, and extruded into useful shapes.



**FIG. 10**

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## EUROPEAN SEARCH REPORT

Application Number  
EP 10 25 1433

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	WO 03/104505 A2 (QUESTEK INNOVATIONS LLC [US]; OLSON GREGORY B [US]; TANG WEIJIA [US];) 18 December 2003 (2003-12-18) * example 1; table 5 * -----	1-7	INV. C22C1/04 C22C21/00 C22F1/04 B22F1/00 B22F3/12 B22F3/14 B22F3/20
X	EP 1 111 078 A2 (UNITED TECHNOLOGIES CORP [US]) 27 June 2001 (2001-06-27) * paragraphs [0028], [0037] - [0043] * -----	1-7,15	
X	US 5 310 520 A (JHA SUNIL C [US] ET AL) 10 May 1994 (1994-05-10) * claims 1-12; figure 5 * -----	8-14	
			TECHNICAL FIELDS SEARCHED (IPC)
			C22C C22F B22F
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 28 July 2011	Examiner González Junquera, J
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ..... &amp; : member of the same patent family, corresponding document</p>			

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EPO FORM 1503 03.82 (P04C01)



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**CLAIMS INCURRING FEES**

The present European patent application comprised at the time of filing claims for which payment was due.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due and for those claims for which claims fees have been paid, namely claim(s):

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due.

**LACK OF UNITY OF INVENTION**

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

☒ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

☐ The present supplementary European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims (Rule 164 (1) EPC).



**LACK OF UNITY OF INVENTION  
SHEET B**

Application Number  
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The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-7, 15

Method of forming a high strength Al alloy billet by powder metallurgical methods (claim 1) from alloys of a given composition

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2. claims: 8-14

Apparatus for making an aluminium alloy billet by powder metallurgy method with the features of claim 8 (container, vacuum source, heat source, sealing means, optional forging machine, extrusion machine)

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**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 10 25 1433

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
The members are as contained in the European Patent Office EDP file on  
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28-07-2011

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82