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kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

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Declarations under Rule 4.17:

— as to the identity of the inventor (Rule 4.17(i))

[Continued on next page]

(54) Title: SYSTEMS, DEVICES, AND/OR METHODS FOR MANUFACTURING CASTINGS

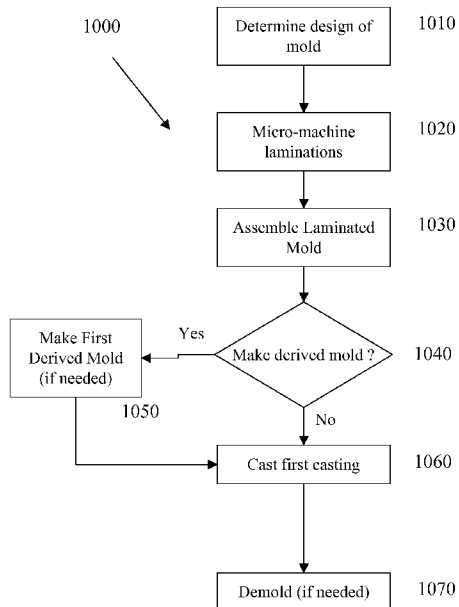


FIG. 1

(57) Abstract: Certain exemplary embodiments can provide a composition, system, machine, device, manufacture, circuit, and/or user interface adapted for, and/or a method and/or machine-readable medium comprising machine-implementable instructions for, activities that can comprise, after removing a cast device from a stack-lamination-derived mold, said cast device formed from a molding composition, applying a desired shape to said cast device to form a shaped cast device, said molding composition comprising: a ceramic composition comprising silica; an cycloaliphatic epoxy binder composition, said cycloaliphatic epoxy binder composition present in said molding composition in an amount up to 30% by weight of said molding composition; a silicone composition comprising a siloxane resin, said silicone composition present in said molding composition in an amount up to 30% by weight of said molding composition; and a solvent composition adapted to dissolve said cycloaliphatic epoxy binder composition and said silicone composition.

WO 2010/036801 A3



— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))* — *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

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(88) Date of publication of the international search report:
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INTERNATIONAL SEARCH REPORT

International application No
PCT/US2009/058220

A. CLASSIFICATION OF SUBJECT MATTER

INV. B29C33/30 B29C33/38 A61B6/00 B22C9/00 B23P15/24
C08K3/22

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
B29C B23P

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WALCZYK D F ET AL: "RAPID TOOLING FOR SHEET METAL FORMING USING PROFILED EDGE LAMINATIONS- DESIGN PRINCIPLES AND DEMONSTRATION" TRANSACTIONS OF THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS, SERIES B: JOURNAL OF ENGINEERING FOR INDUSTRY, ASME. NEW YORK, US, vol. 120, no. 4, 1 November 1998 (1998-11-01), pages 746-754, XP000803370 ISSN: 0022-0817	1-2, 4, 6-13
Y	figure 4 paragraph [0003]	3, 5

Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- * & * document member of the same patent family

Date of the actual completion of the international search

21 January 2010

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08/04/2010

Name and mailing address of the ISA/

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INTERNATIONAL SEARCH REPORT

International application No

PCT/US2009/058220

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4 534 813 A (WILLIAMSON ROBERT D [US] ET AL) 13 August 1985 (1985-08-13) abstract column 1, line 15 - line 59	1
A	----- MISIOLEK W Z ET AL: "RAPID PROTOTYPING OF EXTRUSION DIES USING LAYER-BASED TECHNIQUES" JOURNAL OF MATERIALS ENGINEERING AND PERFORMANCE, ASM INTERNATIONAL, MATERIALS PARK, OH, US, vol. 8, no. 1, 1 February 1999 (1999-02-01), pages 23-30, XP000803292 ISSN: 1059-9495 figure 1	1
A	----- PADALINO A F: "CAD/CAM SYSTEMS AND THEIR INTEGRATION IN MOLD DESIGN" PLASTICS ENGINEERING, SOCIETY OF PLASTICS ENGINEERS, INC. GREENWICH, CONN, US, vol. 52, no. 10, 1 October 1996 (1996-10-01), page 27/28, XP000636019 ISSN: 0091-9578 page 27, column 3, paragraph 1	1
Y	----- US 4 641 270 A (LALLOZ PAUL [FR] ET AL) 3 February 1987 (1987-02-03) column 1, line 39 - line 44	3
Y	----- EP 1 108 518 A1 (FUJITSU LTD [JP]) 20 June 2001 (2001-06-20) abstract	5
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A	----- HIMMER T ET AL: "Lamination of metal sheets" COMPUTERS IN INDUSTRY, ELSEVIER SCIENCE PUBLISHERS. AMSTERDAM, NL, vol. 39, no. 1, 1 June 1999 (1999-06-01), pages 27-33, XP004164326 ISSN: 0166-3615 abstract	1
A	----- US 5 088 047 A (BYNUM DAVID K [US]) 11 February 1992 (1992-02-11) abstract column 3, line 60 - line 62 ----- -/--	1

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2009/058220

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 02/098624 A1 (MIKRO SYSTEMS INC [US]; APPLEBY MICHAEL P [US]; FRASER IAIN [US]; ATKI) 12 December 2002 (2002-12-12) abstract -----	1
A	WO 2008/059272 A2 (BENTLEY MOTORS LTD [GB]; DODWORTH ANTONY [GB]) 22 May 2008 (2008-05-22) page 3, line 11 -----	1
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A	US 4 708 626 A (SAKAI ETSUO [JP] ET AL) 24 November 1987 (1987-11-24) example 1 -----	1
A	EP 0 586 153 A2 (GEN ELECTRIC [US] GEN ELECTRIC [IT]) 9 March 1994 (1994-03-09) abstract -----	1

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2009/058220

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.

3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-13

Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-13

A method of providing a three-dimensional simulated model by using a computer to physically create a mold

2. claims: 14-42, 47-68, 86

A molding composition comprising silica, a cycloaliphatic epoxybinder, a silicone composition and a solvent composition

3. claims: 43-46

A method of making a stack-laminated mold by using a photolithographically-derived foil

4. claims: 69-85, 87-89

Replicating a plurality of 3-dimensional micro-features, said micro-features comprising at least one protruding undercut

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2009/058220

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