

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
28 July 2005 (28.07.2005)

PCT

(10) International Publication Number
WO 2005/068146 A3

(51) International Patent Classification⁷: **B28B 13/02**, 3/12

(21) International Application Number:

PCT/IB2005/000025

(22) International Filing Date: 3 January 2005 (03.01.2005)

(25) Filing Language: Italian

(26) Publication Language: English

(30) Priority Data:

RE2004A000001 8 January 2004 (08.01.2004) IT

(71) Applicant (for all designated States except US): **SACMI COOPERATIVA MECCANICI IMOLA SOCIETA' COOPERATIVA** [IT/TT]; 17/A, Via Selice Provinciale, I-40026 Imola (IT).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **SCARDOVI, Stefano** [IT/TT]; Via Pedagna, 2/A, I-40026 Imola (IT). **VALLI, Silvano** [IT/TT]; Via Cavallazzi, 9, I-40027 Mordano (IT).

(74) Agents: **CORRADINI, Corrado** et al.; Via Dante Alighieri, 4, I-42100 Reggio Emilia (IT).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

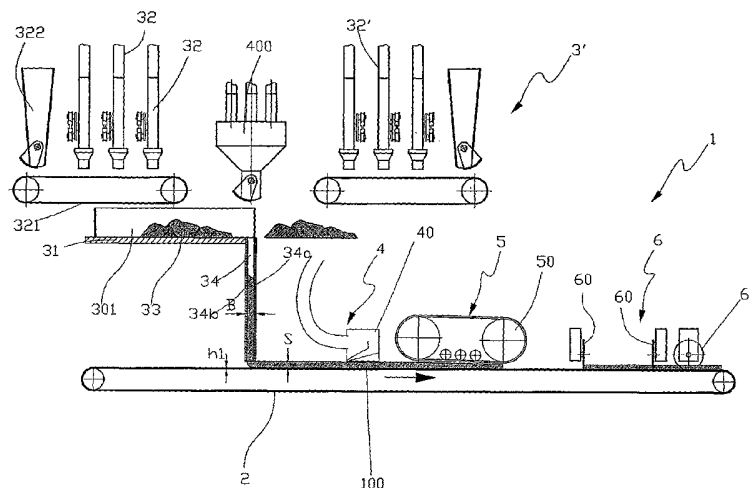
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE,

[Continued on next page]

(54) Title: METHOD AND PLANT FOR PREARRANGING POWDERS FOR FORMING CERAMIC TILES OR SLABS



(57) Abstract: A plant (1) for prearranging powders (33) for forming ceramic tiles or slabs, comprising means (3) for feeding the powders (33), a hopper (34), and a movable fall-on surface (2, 200, 250) positioned below the hopper (34), to receive the powders (33) discharged from the hopper (34.) and advance them along an advancement direction, said hopper (34) is presenting a prismatic shape having a front face (43a) and a rear face (34b) which lie opposite each other transverse to the advancement direction of the fall-on surface (2, 200, 250), the distance (B) between said faces (43a, 34b) being substantially equal to the thickness (S) of the powder strip (100, 100') to be compacted deposited on said surface (2, 200), said powder strip (100, 100') reproducing the same arrangement as the mixture of powders (33) within the hopper (34).



EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR,

HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

Published:

— with international search report

(88) Date of publication of the international search report:

27 October 2005

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/IB2005/000025

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 B28B13/02 B28B3/12

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)

IPC 7 B28B

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, PAJ, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 1 043 134 A (MARAZZI GRUPPO CERAMICHE S.P.A) 11 October 2000 (2000-10-11)	1,3,4, 20, 29-31,33
A	paragraph '0011! - paragraph '0022!; claims; figures	21,22,27
X	EP 1 110 689 A (MARAZZI GRUPPO CERAMICHE S.P.A) 27 June 2001 (2001-06-27)	1,3,4, 20, 29-31,33
A	paragraph '0011! - paragraph '0014!; claims 1,5; figure 1	21,22,27
X	PATENT ABSTRACTS OF JAPAN vol. 1997, no. 01, 31 January 1997 (1997-01-31) & JP 08 244024 A (INAX CORP), 24 September 1996 (1996-09-24) abstract	1,2

-/--



Further documents are listed in the continuation of box C.



Patent family members are listed in 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

18 July 2005

Date of mailing of the international search report

04.08.2005

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Orij, J

INTERNATIONAL SEARCH REPORT

International Application No
PCT/IB2005/000025

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 554 393 A (UCHIDA ET AL) 10 September 1996 (1996-09-10) column 3, line 1 - column 5, line 20; figures 1-4 -----	3,4,7,8, 10, 14-17, 21-23, 27,28,32
X	EP 0 586 257 A (CCA INC) 9 March 1994 (1994-03-09) column 6, line 37 - line 50; figure 8 -----	3-5
X	EP 0 962 294 A (ARIOSTEA S.P.A; IRIS CERAMICA - SOCIETA' PER AZIONI) 8 December 1999 (1999-12-08) paragraph '0016! - paragraph '0033!; figures -----	3,4,6, 20, 29-31,33
X	WO 98/23424 A (CAMORANI, CARLO, ANTONIO; ALGERI, MARIS) 4 June 1998 (1998-06-04) -----	3,4,6-8, 12, 14-16,32
A	page 36, paragraph 2 - page 39, paragraph 4; figures 65,66,73 -----	9,10

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/IB2005/000025

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 1043134	A	11-10-2000	IT MI990719 A1 EP 1043134 A2	09-10-2000 11-10-2000
EP 1110689	A	27-06-2001	IT MI990771 U1 EP 1110689 A2	21-06-2001 27-06-2001
JP 08244024	A	24-09-1996	NONE	
US 5554393	A	10-09-1996	JP 5253462 A US 5736084 A AT 168312 T AU 668906 B2 AU 3374093 A CA 2090365 A1 CN 1080891 A ,C DE 69319638 D1 DE 69319638 T2 EP 0558248 A2 ES 2118891 T3 KR 239991 B1	05-10-1993 07-04-1998 15-08-1998 23-05-1996 02-09-1993 27-08-1993 19-01-1994 20-08-1998 26-11-1998 01-09-1993 01-10-1998 15-01-2000
EP 0586257	A	09-03-1994	ID 19046 A JP 3236360 B2 JP 6106521 A AT 169525 T AU 671846 B2 AU 4614493 A CA 2105643 A1 CN 1108718 A DE 69320277 D1 DE 69320277 T2 EP 0586257 A2 ES 2121059 T3 US 5429676 A US 5795621 A US 5672380 A	04-06-1998 10-12-2001 19-04-1994 15-08-1998 12-09-1996 10-03-1994 05-03-1994 20-09-1995 17-09-1998 08-04-1999 09-03-1994 16-11-1998 04-07-1995 18-08-1998 30-09-1997
EP 0962294	A	08-12-1999	IT RE980062 A1 EP 0962294 A2	02-12-1999 08-12-1999
WO 9823424	A	04-06-1998	IT M0960151 A1 IT M0970004 A1 IT M0970005 A1 AU 5120198 A WO 9823424 A2 EP 1175982 A2 EP 1170104 A2 EP 1170105 A2 EP 1283097 A2 EP 0939691 A2	22-05-1998 16-07-1998 16-07-1998 22-06-1998 04-06-1998 30-01-2002 09-01-2002 09-01-2002 12-02-2003 08-09-1999

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB2005/000025

Box 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 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 fee, this Authority did not invite payment of any additional fee.
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.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ 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: 1,2

method for forming ceramic tiles or slabs

2. claims: 3-33

a plant for prearranging powders
