



(51) International Patent Classification:

B26D 1/22 (2006.01) **B26D 3/10** (2006.01)
B26F 1/20 (2006.01) **B31F 1/10** (2006.01)
B31F 1/07 (2006.01) **B44B 5/00** (2006.01)
B44C 1/24 (2006.01)

(21) International Application Number:

PCT/US2011/038336

(22) International Filing Date:

27 May 2011 (27.05.2011)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

61/348,797 27 May 2010 (27.05.2010) US

(71) Applicant (for all designated States except US): **SIMPLI-CITY PATTERN CO. INC.** [US/US]; 6050 Dana Way, Antioch, Tennessee 37013 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **HATCHER, Kenneth** [US/US]; 1130 Rocky Fork Road, Smyrna, Tennessee 37167 (US). **SHIMP, Rosemary** [US/US]; 5043 Falling Water Road, Nolensville, Tennessee 37135 (US). **SASUR, David** [US/US]; 308 Miller Street, Unit 15, Ludlow, Massachusetts 01056 (US).(74) Agents: **PEREZ, Robert C.F.** et al.; Pillsbury Winthrop Shaw Pittman LLP, P.O. Box 10500, McLean, Virginia 22102 (US).

(81) Designated States (unless otherwise indicated, for every 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, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report (Art. 21(3))
- 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))

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

30 May 2013

(54) Title: ROTARY CUTTING AND EMBOSSED MACHINE

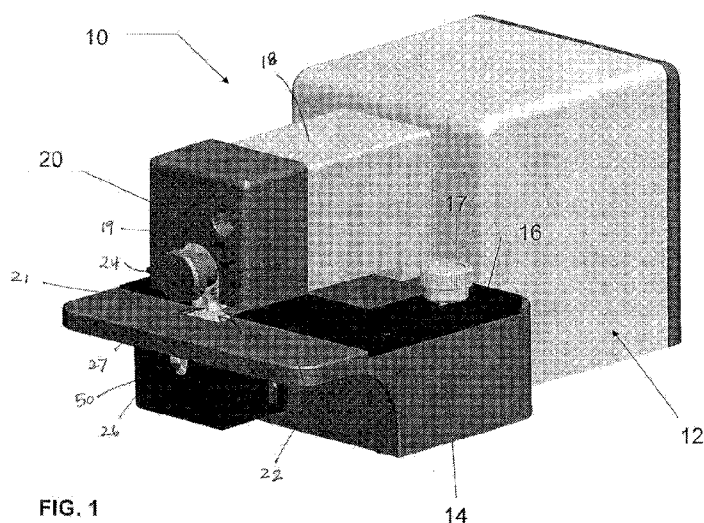


FIG. 1

(57) Abstract: A rotary cutting device includes a body having a cutter blade with a cutting edge and a pressure roller mounted relative to the cutter blade. The cutter blade is configured to rotate about a rotational axis. The pressure roller is rotationally fixed. The cutter blade and the pressure roller are positioned relative to each other such that pressure is applied to a material fed therebetween. As the cutter blade rotates relative to the pressure roller, the pressure applied to the material being fed therebetween allows for a width of material to cut by a cutting edge of rotating cutter blade. An embossing roller may be used in place of the cutter blade to emboss material. The device also includes guide for guiding material into the machine, pressure adjustment for pressure applied to the material, and rotational speed control. A method for using the rotary cutting device is also disclosed.

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2011/038336

A. CLASSIFICATION OF SUBJECT MATTER INV. B26D1/22 B26F1/20 B31F1/07 B44C1/24 B26D3/10 B31F1/10 B44B5/00 ADD. 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) B26D B26F B31F B44C D06H 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 practicable, search terms used) EPO-Internal, WPI Data																													
C. DOCUMENTS CONSIDERED TO BE RELEVANT <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Category*</th> <th style="width: 70%;">Citation of document, with indication, where appropriate, of the relevant passages</th> <th style="width: 20%;">Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td style="text-align: center; vertical-align: top;">X</td> <td>WO 2006/045595 A1 (JENTSCHMANN AG ZUERICH [CH]; HEIL DIETMAR [DE]) 4 May 2006 (2006-05-04) page 5, line 20 - page 12, line 17</td> <td style="text-align: center; vertical-align: top;">1,3,14, 16</td> </tr> <tr> <td style="text-align: center; vertical-align: top;">Y A</td> <td style="text-align: center;">-----</td> <td style="text-align: center; vertical-align: top;">5 4,17</td> </tr> <tr> <td style="text-align: center; vertical-align: top;">X</td> <td>US 2 520 529 A (CHRISTENSEN KAJ S) 29 August 1950 (1950-08-29) cited in the application</td> <td style="text-align: center; vertical-align: top;">1-4, 14-17</td> </tr> <tr> <td style="text-align: center; vertical-align: top;">Y</td> <td>column 1, line 1 - page 3, line 41; figures 1-4</td> <td style="text-align: center; vertical-align: top;">5</td> </tr> <tr> <td style="text-align: center; vertical-align: top;">Y</td> <td style="text-align: center;">-----</td> <td style="text-align: center; vertical-align: top;">5</td> </tr> <tr> <td></td> <td>DE 34 23 674 C1 (BIKOMA GMBH) 21 November 1985 (1985-11-21) column 2, line 52 - column 6, line 40; figure 2</td> <td></td> </tr> <tr> <td></td> <td style="text-align: center;">-----</td> <td></td> </tr> <tr> <td></td> <td style="text-align: center;">-/-</td> <td></td> </tr> </tbody> </table>			Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	X	WO 2006/045595 A1 (JENTSCHMANN AG ZUERICH [CH]; HEIL DIETMAR [DE]) 4 May 2006 (2006-05-04) page 5, line 20 - page 12, line 17	1,3,14, 16	Y A	-----	5 4,17	X	US 2 520 529 A (CHRISTENSEN KAJ S) 29 August 1950 (1950-08-29) cited in the application	1-4, 14-17	Y	column 1, line 1 - page 3, line 41; figures 1-4	5	Y	-----	5		DE 34 23 674 C1 (BIKOMA GMBH) 21 November 1985 (1985-11-21) column 2, line 52 - column 6, line 40; figure 2			-----			-/-	
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.																											
X	WO 2006/045595 A1 (JENTSCHMANN AG ZUERICH [CH]; HEIL DIETMAR [DE]) 4 May 2006 (2006-05-04) page 5, line 20 - page 12, line 17	1,3,14, 16																											
Y A	-----	5 4,17																											
X	US 2 520 529 A (CHRISTENSEN KAJ S) 29 August 1950 (1950-08-29) cited in the application	1-4, 14-17																											
Y	column 1, line 1 - page 3, line 41; figures 1-4	5																											
Y	-----	5																											
	DE 34 23 674 C1 (BIKOMA GMBH) 21 November 1985 (1985-11-21) column 2, line 52 - column 6, line 40; figure 2																												

	-/-																												
☒ 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 application or patent 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 March 2013		Date of mailing of the international search report 27/03/2013																											
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016		Authorized officer Maier, Michael																											

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2011/038336

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 2008/202362 A1 (STRAVITZ DAVID M [US]) 28 August 2008 (2008-08-28) paragraph [0043] - paragraph [0059]; figures 1-5 -----	1,6-8, 10-18

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2011/038336

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.:
1-5, 14-17

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: 1-5, 14-17

A rotary cutting device comprising: a body comprising a motor therein that is configured to selectively receive power from a power source; a cutter blade with a cutting edge mounted to a shaft in the body, the shaft configured to rotate about a rotational axis; and a pressure roller mounted relative to the cutter blade on a bearing shaft, the pressure roller being fixed to remain rotationally stationary relative to the bearing shaft and to the cutter blade, the cutter blade and the pressure roller being positioned relative to each other such that pressure is applied to a material fed therebetween, wherein the motor is configured to selectively rotate the shaft about its axis upon receipt of power from the power source such that the cutter blade rotates relative to the pressure roller so that a width of material is cut by the cutting edge as the material is fed between the rotating cutter blade and the pressure roller; a corresponding method for cutting a material using a rotary cutting device.

2. claims: 6-8, 10-13, 18

A rotary cutting device comprising: a body comprising a motor therein that is configured to selectively receive power from a power source; an embossing roller with an embossing edge mounted to a shaft in the body, the shaft configured to rotate about a rotational axis; a pressure roller mounted relative to the embossing roller on a bearing shaft, the pressure roller being fixed to remain rotationally stationary relative to the bearing shaft and to the embossing roller; the embossing roller and the pressure roller being positioned relative to each other such that pressure is applied to a material fed therebetween, wherein the motor is configured to selectively rotate the shaft about its axis upon receipt of power from the power source such that the embossing roller rotates relative to the pressure roller so that a width of material is embossed using the embossing edge as the material is fed between the rotating embossing roller and the pressure roller.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2011/038336

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2006045595	A1	04-05-2006	NONE
US 2520529	A	29-08-1950	NONE
DE 3423674	C1	21-11-1985	NONE
US 2008202362	A1	28-08-2008	NONE