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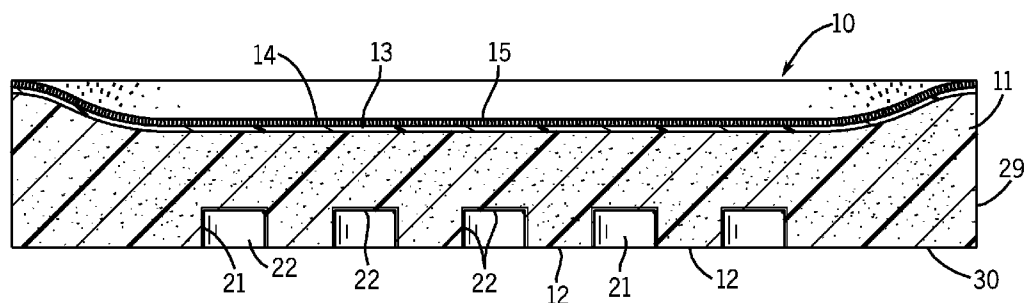
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(54) Title: FOAM BUFFING PAD WITH RANDOM OR STRATEGICALLY PLACED COLLAPSED CELL STRUCTURES



(57) Abstract: Selected surfaces of a cellular polymeric foam surface finishing pad are heated to cause the surface cells to partially collapse or to fully collapse and glaze over. The selected surfaces may be the planar pad faces or may be formed in one or more depressions formed in the planar faces. The areas of partially collapsed cell structures in the operating face of the pad provide a slow down in the rate of polish or compound absorption, increasing the effectiveness of the finishing process. The fully collapsed cell glazed surface on the rear attachment face of the pad prevents the migration of moisture through the pad to the pad attachment mechanism.

INTERNATIONAL SEARCH REPORT

International application No

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A. CLASSIFICATION OF SUBJECT MATTER

INV. B24D3/32 B24D11/00 B24D13/14

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)

B24D

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	US 2003/049995 A1 (SCHUTZ JAMES W [US] ET AL SCHUTZ JAMES W [US] ET AL) 13 March 2003 (2003-03-13)	1-3, 12, 13
Y	paragraphs [0009] - [0017], [0066] - [0074], [0114]	9-11, 19-24
X	EP 1 458 524 A (3M INNOVATIVE PROPERTIES CO [US]) 22 September 2004 (2004-09-22) paragraphs [0001], [0002], [0031] - [0040], [0095] - [0101], [0107] - [0125], [0140] figure 1	1-3, 12, 13

☒ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

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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.

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 95/00295 A (MINNESOTA MINING & MFG [US]) 5 January 1995 (1995-01-05) page 1, line 4 - page 2, line 15 page 3, line 6 - page 5, line 5 page 6, lines 14-18 page 13, line 22 - page 14, line 2 figure 2 -----	1-3, 12, 13
A	US 4 893 436 A (RICH LARRY D [US]) 16 January 1990 (1990-01-16) column 2, lines 55-58 -----	1-24
X	US 5 396 737 A (ENGLUND RICHARD L [US] ET AL) 14 March 1995 (1995-03-14) column 5, lines 27-39 -----	4-8, 14-18
Y	column 7, line 57 -----	9-11, 19-24
A	WO 98/50198 A (MEGUIAR S INC [US]) 12 November 1998 (1998-11-12) the whole document -----	4-11, 14-24

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2007/067756

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2003049995 A1	13-03-2003	AT 293517 T BR 0115086 A CA 2427874 A1 CN 1473095 A DE 60110260 D1 DE 60110260 T2 EP 1347862 A1 ES 2240349 T3 JP 3968021 B2 JP 2004519341 T JP 2007190678 A MX PA03003847 A WO 02076678 A1	15-05-2005 30-12-2003 03-10-2003 04-02-2004 25-05-2005 09-03-2006 01-10-2003 16-10-2005 29-08-2007 02-07-2004 02-08-2007 20-04-2004 03-10-2002
EP 1458524 A	22-09-2004	AT 318677 T AU 2002356909 A1 BR 0215335 A CA 2469808 A1 CN 1767926 A DE 60209573 T2 ES 2261792 T3 JP 2005514217 T WO 03057410 A1 US 2003150169 A1	15-03-2006 24-07-2003 16-11-2004 17-07-2003 03-05-2006 07-12-2006 16-11-2006 19-05-2005 17-07-2003 14-08-2003
WO 9500295 A	05-01-1995	DE 69406446 D1 DE 69406446 T2 EP 0702615 A1 ES 2109709 T3 JP 8511733 T US 6371842 B1	27-11-1997 28-05-1998 27-03-1996 16-01-1998 10-12-1996 16-04-2002
US 4893436 A	16-01-1990	NONE	
US 5396737 A	14-03-1995	NONE	
WO 9850198 A	12-11-1998	AT 301022 T AU 732843 B2 AU 7478598 A CA 2288829 A1 DE 69831089 D1 DE 69831089 T2 EP 1024924 A2	15-08-2005 03-05-2001 27-11-1998 12-11-1998 08-09-2005 08-06-2006 09-08-2000