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- (74) **Agents:** WEBER, Kevin W. et al.; 3M Center Office of Intellectual Property Counsel, Post Office Box 33427, Saint Paul, Minnesota 55133-3427 (US).
- (81) **Designated States (unless otherwise indicated, for every kind of national protection available):** AE, AG, AL, AM,

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- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

Published:

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(54) **Title:** POLYMER COATED DENTAL ARTICLES AND METHOD OF MAKING THE SAME

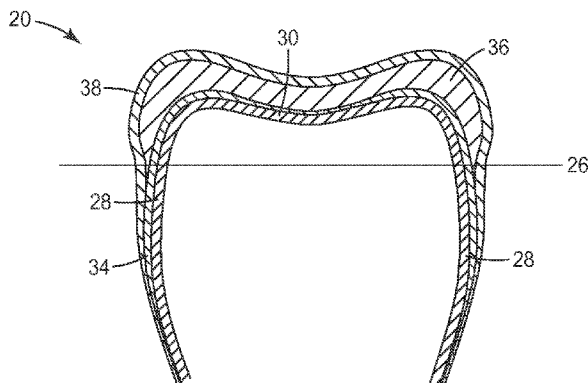


FIG. 3

(57) **Abstract:** Provided are methods of improving the wear resistance and aesthetic properties of dental articles, as well as dental articles having an abrasion resistant polymeric coating thereon.



INTERNATIONAL SEARCH REPORT

International application No
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A. CLASSIFICATION OF SUBJECT MATTER
INV. A61C5/08 A61C13/00 A61K6/00
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)
A61C A61K

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, CHEM ABS Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 1 124 645 A (WILLIAMS GOLD REFINING CO) 21 August 1968 (1968-08-21) the whole document	1-30
X	GB 1 115 544 A (WILLIAMS GOLD REFINING CO) 29 May 1968 (1968-05-29) page 1, line 21 - line 30 page 1, line 44 - line 48 page 1, line 65 - page 2, line 35 claims; example	1-8,12, 13, 17-19, 21-26, 29,30

Further documents are listed in the continuation of Box C.

See patent family annex.

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"A" document defining the general state of the art which is not considered to be of particular relevance

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"&" document member of the same patent family

Date of the actual completion of the international search 8 October 2012	Date of mailing of the international search report 19/10/2012
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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 Pelli Wablat, B
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INTERNATIONAL SEARCH REPORT

International application No
PCT/US2011/046909

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DATABASE CAPLUS [Online] CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; 2002, Saimi, Yasukazu et al.: "Dental adhesive material sets and their use for hiding of metallic color", XP002684698, retrieved from stn Database accession no. 2002:606307 abstract -----	1,2,6-8, 12
X	US 6 106 295 A (WILSON GEORGE M [US]) 22 August 2000 (2000-08-22) column 1, line 5 - line 13 column 2, line 27 - line 37 column 3, line 1 - line 12 column 4, line 3 - column 5, line 58 claims -----	12,13
X	DATABASE WPI Week 198951 Thomson Scientific, London, GB; AN 1989-373009 XP002684699, & JP 1 277553 A (MITSUI PETROCHEM IND CO LTD) 8 November 1989 (1989-11-08) abstract -----	12
X	US 5 454 716 A (BANERJEE SATYAJIT [US] ET AL) 3 October 1995 (1995-10-03) column 1, line 55 - line 67 column 3, line 29 - column 10, line 16 claims -----	12,14-16
A	US 5 624 261 A (WIEDENFELD KENNETH R [US]) 29 April 1997 (1997-04-29) claims -----	31
A	US 2003/194681 A1 (STOLLER WILLIAM J [US] ET AL) 16 October 2003 (2003-10-16) cited in the application the whole document -----	1-8,12, 13, 17-19, 21-26, 29,30

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2011/046909

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
GB 1124645	A	21-08-1968	AT 270850 B 12-05-1969
			CH 460245 A 31-01-1968
			DE 1516453 A1 31-07-1969
			GB 1124645 A 21-08-1968
			IL 24606 A 20-04-1970
			NL 6600363 A 20-02-1967
			SE 325992 B 13-07-1970
			US 3470615 A 07-10-1969

GB 1115544	A	29-05-1968	NONE

US 6106295	A	22-08-2000	NONE

JP 1277553	A	08-11-1989	NONE

US 5454716	A	03-10-1995	AU 3225889 A 12-10-1989
			US 5454716 A 03-10-1995

US 5624261	A	29-04-1997	NONE

US 2003194681	A1	16-10-2003	AU 2003210863 A1 27-10-2003
			US 2003194681 A1 16-10-2003
			WO 03086229 A1 23-10-2003
