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#### (54) Title: SPILL-RESISTANT CUPS WITH ACTIVE INGREDIENT DELIVERY SYSTEMS

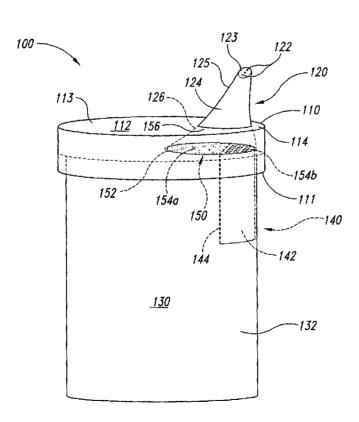


Fig. 2A

(57) Abstract: Spill-resistant cups for consuming beverages with delivery systems for simultaneously dispensing one or more agents which can reduce the rate of beverage-induced tooth decay and/or enamel erosion are disclosed herein. In one embodiment, the spill-resistant cup can include a hollow cup body defining a beverage holding chamber. The spill-resistant cup also includes a lid assembly with a drinking spout having one or more spaced-apart drinking holes. The drinking spout is configured to be engaged by a consumer's mouth. The lid assembly can positively engage the cup body to enclose the beverage holding chamber. The spill-resistant cup can also include an agent delivery system for controlled delivery of the active ingredient to the consumer's mouth. Further, the spill-resistant cup can include a flow control element configured to limit a flow rate of the beverage from the beverage holding chamber to the drinking holes disposed in the drinking spout.

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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

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
		Therevant to dain 140.
χ	US 2005/247719 A1 (LOGING JAMES A)	1-8,
	10 November 2005 (2005-11-10)	10-14,
		17-23,
	figure 2	26-30,32
	figure 3	•
X	WO 97/23190 A (ABBOTT LABORATORIES)	1-9,11,
	3 July 1997 (1997-07-03)	14-33
	figures 1,11,20	
Χ	US 4 915 242 A (MARTE FRANK W)	1-8,10,
	10 April 1990 (1990-04-10)	11,14,
		16-23,
	figure 3	25-30,32
	-/	
	·	
	4	

X Further documents are listed in the continuation of Box C.	X See patent family annex.
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Date of the actual completion of the international search	Date of mailing of the international search report
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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  Reichhardt, Otto
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## INTERNATIONAL SEARCH REPORT

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C(Continua	tion). DOCUMENTS CONSIDERED TO BE RELEVANT	
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Х	US 5 960 971 A (BRAL HOOSHANG) 5 October 1999 (1999-10-05)	1-8,10, 11,14, 17-23, 26-30,32
	column 5, lines 30-33	
,	210 (continuation of second sheet) (April 2005)	

## INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
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10-11-2005	NONE		
03-07-1997	AT AU BR DE DK EP ES JP NZ PT US US	262884 T 1152197 A 9612182 A 69632067 D1 69632067 T2 869760 T3 0869760 A1 2221940 T3 11502450 T 324630 A 869760 T 5921955 A 5707353 A	15-04-2004 17-07-1997 13-07-1999 06-05-2004 17-02-2005 02-08-2004 14-10-1998 16-01-2005 02-03-1999 28-05-1999 31-08-2004 13-07-1999 13-01-1998
10-04-1990	NONE		· · · · · · · · · · · · · · · · · · ·
05-10-1999	NONE		
	03-07-1997	03-07-1997 AT AU BR DE DE DK EP ES JP NZ PT US US	03-07-1997 AT 262884 T AU 1152197 A BR 9612182 A DE 69632067 D1 DE 69632067 T2 DK 869760 T3 EP 0869760 A1 ES 2221940 T3 JP 11502450 T NZ 324630 A PT 869760 T US 5921955 A US 5707353 A