(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
27 September 2007 (27.09.2007)

PCT

(10) International Publication Number
WO 2007/109794 A3

(51) International Patent Classification:
B65D 8/04 (2006.01) *B65D 59/02* (2006.01)

(21) International Application Number:
PCT/US2007/064817

(22) International Filing Date: 23 March 2007 (23.03.2007)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/743,680 23 March 2006 (23.03.2006) US

(71) Applicant *(for all designated States except US)*: **MEAD-WESTVACO CORPORATION** [US/US]; 11013 West Broad Street, Glen Allen, VA 23060 (US).

(72) Inventor; and

(75) Inventor/Applicant *(for US only)*: **MAZUREK, Richard** [US/US]; 1031 Roseland Avenue, Hungtingdon Valley, PA 19006 (US).

(74) Agents: **KNOWLTON, Paul, E.** et al.; Parks Knowlton LLC., 1117 Perimeter Center West, Suite E402, Atlanta, GA 30338 (US).

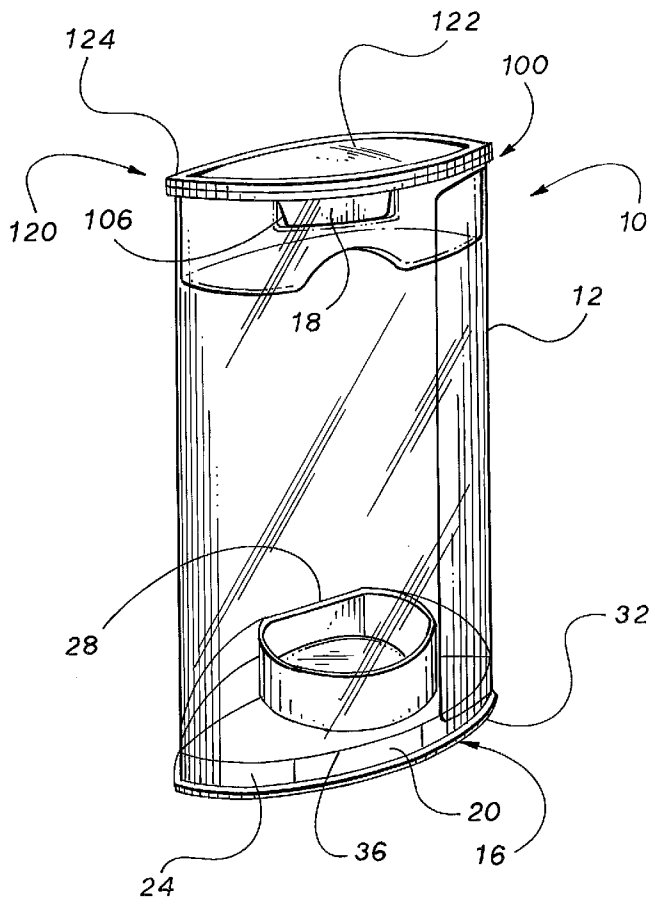
(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, 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, 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, LV, MC, MT, 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).

Published:
— *with international search report*

[Continued on next page]

(54) **Title:** END CAP FOR PRODUCT CONTAINER



(57) **Abstract:** An end cap (100) is insertable into an open end of a sleeve (12) as an end closure for forming a package (10). The end cap (100) has a housing (102) that is adapted to be closely received by the sleeve (12) and that terminates at a first end in a flanged perimeter (104). The end cap (100) also has a strut structure (120) extending between regions of the housing (100) so as to reinforce the housing (100) against deformation. The strut structure (120) may extend between regions of the housing (102) proximate the flanged perimeter (104). The strut structure (120) may take the form of a cover that is affixed to the flanged perimeter (104) of the housing (102). The cover (120) may have a perimeter (124) with an interior portion (122) extending therebetween. The perimeter (124) of the cover may be affixed to the flanged perimeter (104) of the housing (102).

WO 2007/109794 A3

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

(88) Date of publication of the international search report:
6 December 2007

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/US2007/064817

A. CLASSIFICATION OF SUBJECT MATTER
INV. B65D8/04 B65D59/02

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)
B65D

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, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2003/226770 A1 (GELARDI JOHN A [US] ET AL) 11 December 2003 (2003-12-11) the whole document	1-18
A	US 4 802 577 A (O'LEARY DENNIS E [US]) 7 February 1989 (1989-02-07) column 2, line 34 - line 44; figures	
A	US 5 641 064 A (GOSERUD J THOMAS [US]) 24 June 1997 (1997-06-24) column 3, line 52 - line 64; figures	
A	US 4 231 486 A (BOCK ERIK) 4 November 1980 (1980-11-04) abstract; figures	

☐ 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 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	Date of mailing of the international search report
18 September 2007	26/09/2007

Name and mailing address of the ISA/	Authorized officer
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	SERRANO GALARRAGA, J

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/US2007/064817

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2003226770 A1	11-12-2003	AU 2003243428 A1	22-12-2003
		BR PI0311582 A	17-04-2007
		CN 1671600 A	21-09-2005
		EP 1509457 A1	02-03-2005
		MX PA04012197 A	04-11-2005
		WO 03104091 A1	18-12-2003
US 4802577 A	07-02-1989	NONE	
US 5641064 A	24-06-1997	US 5813529 A	29-09-1998
US 4231486 A	04-11-1980	BE 877188 A1	15-10-1979
		CA 1132947 A1	05-10-1982
		CH 639911 A5	15-12-1983
		DE 2923785 A1	03-01-1980
		DK 284278 A	24-12-1979
		FI 791898 A	24-12-1979
		FR 2431968 A1	22-02-1980
		GB 2023555 A	03-01-1980
		IT 1121887 B	23-04-1986
		NL 7904799 A	28-12-1979
		NO 792078 A	28-12-1979
		SE 438835 B	13-05-1985
		SE 7905472 A	24-12-1979