



(51) International Patent Classification:

B29D 22/00 (2006.01) *B29C 45/44* (2006.01)
B29C 33/38 (2006.01) *B29C 33/54* (2006.01)
B29C 70/70 (2006.01) *B29C 41/14* (2006.01)
B29C 33/52 (2006.01) *B29C 33/48* (2006.01)
B25J 15/12 (2006.01)

(21) International Application Number:

PCT/IB2013/000042

(22) International Filing Date:

14 January 2013 (14.01.2013)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

2012-005972 16 January 2012 (16.01.2012) JP

(71) Applicant: **TOYOTA JIDOSHA KABUSHIKI KAISHA** [JP/JP]; 1, Toyota-cho, Toyota-shi, Aichi-ken, 471-8571 (JP).

(72) Inventor; and

(71) Applicant (*for US only*): **MATSUOKA, Hirofumi** [JP/JP]; c/o Toyota Jidosha Kabushiki Kaisha, of 1, Toyota-cho, Toyota-shi, Aichi-ken, 471-8571 (JP).

(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, BN, 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, 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, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, 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, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, 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).

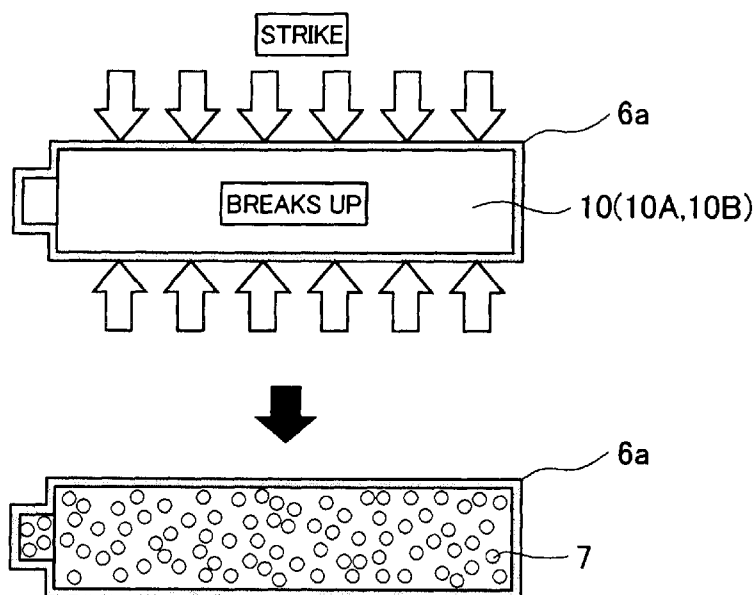
Published:

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

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

31 October 2013

(54) Title: MANUFACTURING METHOD OF BAG BODY WITH A GRANULAR FILLING



(57) Abstract: A manufacturing method of a bag body that has a bag-shaped member made of an elastic and airtight material, and a granular substance filled inside of the bag-shaped member, includes a step of preparing a core for forming the bag-shaped member, by hardening the granular substance; a step of forming the bag-shaped member by forming a covering made of the elastic and airtight material around the core; and a step of breaking up the core that is inside of the bag-shaped member.

INTERNATIONAL SEARCH REPORT

International application No
PCT/IB2013/000042

A. CLASSIFICATION OF SUBJECT MATTER

INV. B29D22/00 B29C33/38 B29C70/70 B29C33/52
ADD. B25J15/12 B29C45/44 B29C33/54 B29C41/14 B29C33/48

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)

B29C B29D B25J A63B

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)

EP0-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.
X	FR 588 657 A (GOODYEAR TIRE & RUBBER) 13 May 1925 (1925-05-13) page 2, line 34 - page 3, line 67; figure 3 -----	1-8
X	JP S58 20430 A (DAINICHI NIPPON CABLES LTD) 5 February 1983 (1983-02-05) abstract; figure 2 -----	1
X	GB 621 046 A (DUNLOP RUBBER CO; DOUGLAS FRANK TWISS; ALBERT EDWARD TONEY NEALE) 4 April 1949 (1949-04-04) page 2, line 64 - line 109; claims 3,10-11 -----	1,7,8
X	JP S62 117707 A (TAKAGI KOGYO KK) 29 May 1987 (1987-05-29) abstract; figures ----- -/--	1,4-6



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

28 June 2013

Date of mailing of the international search report

29/07/2013

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

Mathey, Xavier

INTERNATIONAL SEARCH REPORT

International application No
PCT/IB2013/000042

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 93/25365 A1 (SAHARI HARRI [FI]; TOERMAE EERIK [FI]; JYLHAE HANNU [FI]) 23 December 1993 (1993-12-23) page 5, line 1 - page 9, line 20; figures page 10, line 15 - line 32 -----	1,4,6
A	US 4 424 183 A (NELSON MARK A [US]) 3 January 1984 (1984-01-03) column 2, line 47 - column 4, line 28; claims; figures -----	1,5

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IB2013/000042

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
FR 588657	A	13-05-1925	NONE	
JP S5820430	A	05-02-1983	NONE	
GB 621046	A	04-04-1949	NONE	
JP S62117707	A	29-05-1987	NONE	
WO 9325365	A1	23-12-1993	AU 4073493 A FI 922716 A WO 9325365 A1	04-01-1994 12-12-1993 23-12-1993
US 4424183	A	03-01-1984	NONE	