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(71) Applicant: THE PROCTER & GAMBLE COMPANY

(72) Inventor: JOSEPH, Laveeta; One Procter & Gamble Plaza, Cincinnati, Ohio 45202 (US).


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[Continued on next page]

(54) Title: ABSORBENT ARTICLES HAVING CHANNEL-FORMING AREAS AND WETNESS INDICATOR

(57) Abstract: An absorbent article (20) comprising an absorbent core (28) having at least two longitudinally extending channel-forming areas (26a,b) and a wetness indicator (100). The core wrap comprises a top side (16) and a bottom side (16'), which are attached to each other through areas (26a,b) substantially free of absorbent material, so that when the absorbent material (60) swells upon absorption of a liquid the core wrap forms channels (26a,b) along these areas (26a,b) substantially free of absorbent material. The wetness indicator is placed between the channel-forming areas (26a,b) or between at least one channel-forming area (26a,b) and at least one longitudinally extending side edge (13, 14) of the article, as seen for the exterior of the article.
Before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

Date of publication of the international search report: 24 September 2015
**INTERNATIONAL SEARCH REPORT**

**A. CLASSIFICATION OF SUBJECT MATTER**

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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)

A61F

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

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

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<td>US 2012/095424 AI (KOMATSU SHINPEI [JP] ET AL) 19 Apr I 2012 (2012-04-19) figures 1, 8, 9, 15-17: paragraphs 1, 2, 7, 15, 32, 33, 39, 42, 43, 56, 64, 69, 82, 83</td>
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Further documents are listed in the continuation of Box C.

**Date of the actual completion of the international search**

1 June 2015

**Date of mailing of the international search report**

17/08/2015

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**

Barenbrug, Theo
### Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. □ Claims Nos.:
   because they relate to subject matter not required to be searched by this Authority, namely:

2. □ Claims Nos.:
   because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. □ Claims Nos.:
   because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

### Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

**see additional sheet**

1. □ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. □ As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.

3. □ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. □ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

   2-6(completely) ; I (partially)

**Remark on Protest**

□ The additional search fees were accompanied by the applicant’s protest and, where applicable, the payment of a protest fee.

□ The additional search fees were accompanied by the applicant’s protest but the applicable protest fee was not paid within the time limit specified in the invitation.

□ No protest accompanied the payment of additional search fees.
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The problem solved is how to prevent the bursting open of the core wrap upon wetness being sealed in a particular way. The problem solved is how to provide the wetness indicator.

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2. claims: 7 (completely) ; l (partially)

An absorbent article having a wrapped core with SAP and having channels free from SAP, the top and bottom sides of the core wrap being attached to each other through the core channel's; and a wetness indicator placed between the channel-forming areas or between a channel-forming area and a side edge of the article and between the core wrap bottom side and the backsheet. The core comprising a certain amount of SAP, depending on the age of the user. The problem solved is how to adapt the diaper of the invention to the urination characteristics of newborns, infants and adults.

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3. claims: 8-10 (completely) ; l (partially)

An absorbent article having a wrapped core with SAP and having channels free from SAP, the top and bottom sides of the core wrap being attached to each other through the core channel's; and a wetness indicator placed between the channel-forming areas or between a channel-forming area and a side edge of the article and between the core wrap bottom side and the backsheet. Various choices for the channel dimensions. The problem solved is how to improve the longitudinal distribution of body fluids over the article.

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4. claims: l (completely) ; l (partially)

An absorbent article having a wrapped core with SAP and having channels free from SAP, the top and bottom sides of the core wrap being attached to each other through the core channel's; and a wetness indicator placed between the channel-forming areas or between a channel-forming area and a side edge of the article and between the core wrap bottom side and the backsheet. The core wrap being made of two parts, being sealed in a particular way. The problem solved is how to prevent the bursting open of the core wrap upon
swelling of the core.

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5. Claims: 12 (completely); 1 (partially)

An absorbent article having a wrapped core with SAP and having channel(s) free from SAP, the top and bottom sides of the core wrap being attached to each other through the core channels; and a wetness indicator placed between the channel-forming areas or between a channel-forming area and a side edge of the article and between the core wrap bottom side and the backsheet. The absorbent material in the article being deposited in particular ways. The problem solved is how to improve the fit of the article between the legs.

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6. Claims: 13-15 (completely); 1 (partially)

An absorbent article having a wrapped core with SAP and having channel(s) free from SAP, the top and bottom sides of the core wrap being attached to each other through the core channels; and a wetness indicator placed between the channel-forming areas or between a channel-forming area and a side edge of the article and between the core wrap bottom side and the backsheet. The core is constructed from two substrates having SAP islands on them, being attached by overcast fibrous hot melt adhesive. The problem solved is how to construct the core in order to obtain a very thin article.

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