

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

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
18 April 2002 (18.04.2002)

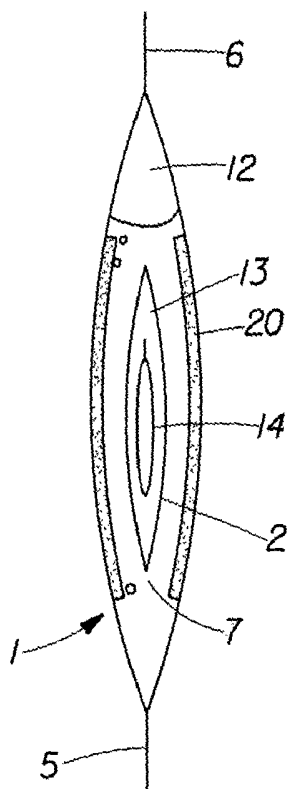
PCT

(10) International Publication Number  
WO 02/030251 A3

- (51) International Patent Classification<sup>7</sup>: A47J 36/28, B65D 81/34 Piyush, Narendra; 9615 Fox Run Drive, Mason, OH 45040 (US).
- (21) International Application Number: PCT/US01/31541 (74) Agents: REED, T., David et al.; The Procter & Gamble Company, 5299 Spring Grove Avenue, Cincinnati, OH 45217-1087 (US).
- (22) International Filing Date: 9 October 2001 (09.10.2001)
- (25) Filing Language: English (81) Designated States (national): AE, AG, AL, AM, AT (utility model), AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ (utility model), CZ, DE (utility model), DE, DK (utility model), DK, DM, DZ, EC, EE (utility model), EE, ES, FI (utility model), FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK (utility model), SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.
- (26) Publication Language: English (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE,
- (30) Priority Data: 09/686,493 10 October 2000 (10.10.2000) US
- (71) Applicant: THE PROCTER & GAMBLE COMPANY [US/US]; One Procter & Gamble Plaza, Cincinnati, OH 45202 (US).
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[Continued on next page]

(54) Title: PRODUCT DISPENSER HAVING INTERNAL TEMPERATURE CHANGING ELEMENT



(57) Abstract: A temperature modifying system for heating or cooling a product (07) including a flexible outer container (1) containing a product (7) and a self-enclosed temperature-changing element is disclosed. The temperature-changing element includes a flexible pouch (2) at least partially immersed in said product (7). The flexible film pouch (2) may have two components separated by a rupturable barrier (14) that is adapted to burst under an application of pressure allowing the two components to combine or react in an exothermic or endothermic event. The flexible film pouch (2) may alternatively include a saturated salt solution that generates as it drops out of solution.



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IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**(88) Date of publication of the international search report:**  
10 April 2003

**Published:**

— *with international search report*

*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/US 01/31541

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 A47J36/28 B65D81/34

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)  
IPC 7 B65D A47J 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 practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 116 231 A (SABIN CULLEN M ET AL) 12 September 2000 (2000-09-12)	1-3,5-8, 15, 23-25, 30,32
Y	column 3, line 59 -column 4, line 2  column 4, line 22 - line 39 column 8, line 2 - line 5 column 8, line 48 -column 6, line 3 column 10, line 6 - line 11 figures 1,3	9,11,12, 19
Y	US 3 585 982 A (HOLLINSHEAD JAMES A) 22 June 1971 (1971-06-22)	9,11,12, 19
A	column 5, line 57 - line 75  figure 1	1,6,15, 23-25,32
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Further documents are listed in the continuation of box C.

Patent family members are listed in 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

4 June 2002

Date of mailing of the international search report

09. 09. 2002

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International Application No

PCT/US 01/31541

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,X	<p>US 6 289 889 B1 (DIPPO JAMES L ET AL) 18 September 2001 (2001-09-18)</p> <p>column 1, line 3 - line 7 column 5, line 56 -column 6, line 3 column 6, line 27 - line 34 column 6, line 39 - line 50 figures 1K,1L</p> <p style="text-align: center;">---</p>	1-3,5-8, 15, 22-25,30
A	<p>US 5 263 929 A (DAVIS JAMES F ET AL) 23 November 1993 (1993-11-23) cited in the application column 5, line 53 -column 6, line 17 figure 2</p> <p style="text-align: center;">---</p>	1,4
A	<p>US 5 979 164 A (SCUDDER JAMES A ET AL) 9 November 1999 (1999-11-09) cited in the application column 11, line 61 -column 12, line 59 figures 16,17</p> <p style="text-align: center;">-----</p>	1,33

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US 01/31541

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 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 II Observations where unity of invention is lacking (Continuation of item 2 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 fee, this Authority did not invite payment of any additional fee.
  
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.:

1-33

### Remark on Protest

- The additional search fees were accompanied by the applicant's protest.
- No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-33

temperature modifying system containing a flexible outer container and a self-enclosed temperature-changing element comprising a flexible pouch and two components separated by a rupturable barrier adapted to burst under application of pressure

2. Claim : 34

temperature modifying system containing a flexible outer container and a self-enclosed temperature-changing element comprising a flexible pouch, saturated salt and an element adapted to create a nucleation site under application of pressure to allow said saturated salt to crystallise

## INTERNATIONAL SEARCH REPORT

Information on patent family members

Int'l Application No

PCT/US 01/31541

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
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PCT/US 01/31541

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