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(71) Applicant (for all designated States except US): **OTTER CONTROLS LIMITED** [GB/GB]; Tongue Lane Industrial Estate, Dew Pond Lane, Fairfield, Buxton Derbyshire SK17 7LF (GB).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **COLLINSON, Michael** [GB/GB]; 10 Hillcrest Road, Offerton, Stockport Cheshire SK2 5QL (GB). **WRIGHT, Peter, Hallam** [GB/GB]; 167 Endon Road, Norton Green, Stoke-on-Trent Staffordshire ST6 8NW (GB). **HADFIELD, Robert, Henry** [GB/GB]; 29 Leigh Avenue, Marple, Cheshire SK6 6DF (GB).

(74) Agent: **CROSS, James**; RGC Jenkins & Co., 26 Caxton Street, London Greater London SW1H 0RJ (GB).

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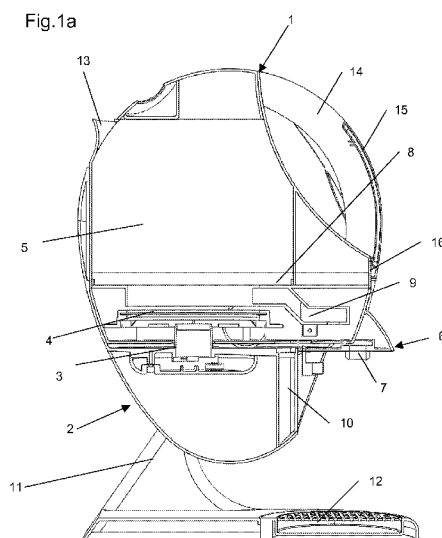
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(88) Date of publication of the international search report:
5 January 2012

(54) Title: LIQUID HEATING APPLIANCES



(57) Abstract: A liquid heating appliance comprises one or more of: a cordless heating vessel (5) connectable to a base (2) having an integrated liquid dispenser; a kettle with an integrated dispenser (6) that dispenses under gravity; a heating chamber that dispenses under steam pressure or through a spout (13); an integrated cordless kettle and flow-through heater (41); and an expandable reservoir (80).

INTERNATIONAL SEARCH REPORT

International application No
PCT/GB2010/050135

A. CLASSIFICATION OF SUBJECT MATTER
INV. F24H1/20
ADD.

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)
F24H A47J E03D

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.
A	WO 2008/139173 A2 (OTTER CONTROLS LTD [GB]; GAETA ANTONIO MARTIN [GB]; WRIGHT PETER HALLA) 20 November 2008 (2008-11-20) page 8, line 17 - page 14, line 10; figures 1-4,4a	1
X	US 4 559 651 A (TANAHASHI TAKASHI [JP] ET AL) 24 December 1985 (1985-12-24) column 1, line 5 - column 2, line 55; figure 1	1,2
X	US 2007/056994 A1 (WOODNORTH DOUGLAS [US] ET AL) 15 March 2007 (2007-03-15) paragraph [0018] - paragraph [0042]; figures 1-4	1,2
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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

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22/11/2011

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

Lehe, Jörn

INTERNATIONAL SEARCH REPORT

International application No.
PCT/GB2010/050135

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.:

1, 2

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.

INTERNATIONAL SEARCH REPORT

International application No

PCT/GB2010/050135

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2005/053370 A1 (MORIMOTO YASUSHI [JP] ET AL) 10 March 2005 (2005-03-10) paragraph [0086] - paragraph [0119]; figures 1-4 -----	1,2

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/GB2010/050135

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2008139173 A2	20-11-2008	CN 201348350 Y CN 101730493 A EP 2150157 A2 GB 2460100 A	18-11-2009 09-06-2010 10-02-2010 18-11-2009
US 4559651 A	24-12-1985	DE 3474329 D1 EP 0151779 A2	03-11-1988 21-08-1985
US 2007056994 A1	15-03-2007	AT 430507 T AU 2006291158 A1 CA 2622038 A1 CN 101272718 A EP 1924178 A1 HK 1119037 A1 JP 2009507608 A KR 20080059195 A NZ 566521 A WO 2007033016 A1	15-05-2009 22-03-2007 22-03-2007 24-09-2008 28-05-2008 31-07-2009 26-02-2009 26-06-2008 30-09-2010 22-03-2007
US 2005053370 A1	10-03-2005	CN 1610514 A WO 03090591 A1	27-04-2005 06-11-2003

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, 2

liquid heating appliance with control for varying the temperature

2. claims: 3-8

liquid heating appliance with a control arranged to transfer an additional quantity of liquid

3. claims: 9-14

liquid heating appliance with a dispenser interconnected by a valve having at least three valve states

4. claims: 15-21

liquid heating appliance with a recirculating state

5. claim: 22

liquid heating appliance with a user-contactable surface including an antibacterial agent.

6. claim: 23

liquid heating appliance with an electrical or electronic component in thermal contact with the reservoir such that the reservoir acts as a heat sink

7. claims: 24, 25

liquid heating appliance with the dispenser being arranged that a volume of liquid is retained between the liquid heating chamber and the outlet

8. claims: 26-28

liquid heating appliance with wherein liquid is dispensable from the reservoir both by lifting the reservoir from the base and pouring liquid from the reservoir

9. claims: 29-35

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

liquid heating appliance with first and second heating chambers, a user-actuatable valve for selectively interconnecting the first and second chambers

10. claims: 36, 37, 43-45

liquid heating appliance with a liquid reservoir arranged to supply liquid to a heating chamber by means of a valve, the heating chamber being arranged to dispense liquid under steam pressure

11. claim: 38

liquid heating appliance with a flow-through heater removably connectable to a liquid reservoir so as to recirculate heated liquid to the liquid reservoir

12. claim: 39

liquid heating appliance with comprising a flow-through heater connectable or connected to a liquid reservoir via a two-way valve so as selectively to dispense heated liquid or recirculate heated liquid to the liquid reservoir

13. claims: 40-42

a cordless liquid heating vessel having a cordless base integrated with the liquid reservoir

14. claims: 46-48

liquid heating appliance with a pivotally openable lid, wherein the axis of opening of the lid is displaced away from an end of the lid closest to the handle

15. claims: 49-51

liquid heating appliance with a reservoir arranged to dispense liquid into a heating chamber by means of a user actuatable valve, wherein the valve is arranged to empty the reservoir to a level determined by the actuation thereof

16. claims: 52, 53

liquid heating appliance with the reservoir has a variable volume determined by the level of liquid contained therein

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

17. claims: 54, 55

liquid heating appliance with the reservoir has a variable
volume determined by the level of liquid contained in the
heating chamber

18. claims: 56-61

liquid heating appliance with first and second heating
loads supplied by discrete power supplies and controlled by
a common control
