



(51) International Patent Classification:
B67D 1/08 (2006.01) **B67D 1/04** (2006.01)

(21) International Application Number:
PCT/IB2009/055416

(22) International Filing Date:
30 November 2009 (30.11.2009)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
08170478.5 2 December 2008 (02.12.2008) EP

(71) Applicant (for all designated States except US): **KONINKLIJKE PHILIPS ELECTRONICS N.V.** [NL/NL]; Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **KROM, Peter, C.** [NL/NL]; c/o High Tech Campus Building 44, NL-5656 AE Eindhoven (NL). **VAN DEN AKER, Karel, J., A.** [NL/NL]; c/o High Tech Campus Building 44, NL-5656 AE Eindhoven (NL). **DOBRUSSKIN, Christoph** [DE/NL]; c/o High Tech Campus Building 44, NL-5656 AE Eindhoven (NL). **WEEKAMP, Johannes, W.** [NL/NL]; c/o High Tech Campus Building 44, NL-5656 AE Eindhoven (NL).

(74) Agents: **UITTENBOGAARD, Frank** et al.; High Tech Campus 44, NL-5600 AE Eindhoven (NL).

(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, 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, JP, 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, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, 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, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

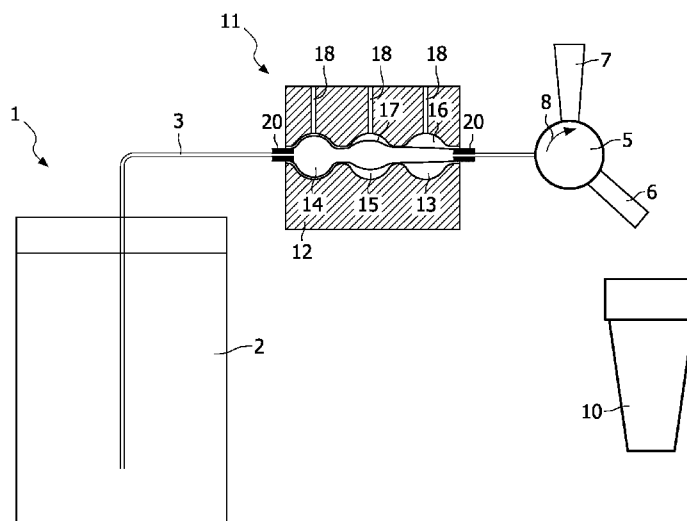
Declarations under Rule 4.17:

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))

Published:

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

(54) Title: A DOMESTIC BEVERAGE DISPENSING DEVICE HAVING COOLING MEANS



(57) Abstract: A domestic beverage dispensing device comprising conduit means (3) for supplying the beverage (2) from a keg (1) to a tap (5) and a cooling member (12). The cooling member (12) has a passage (13) surrounded by heat conductive material. A disposable tube (17) of deformable material forms at least a part of said conduit means (3) and extends through said passage (13). The deformability of the material of the disposable tube (17) is such that the outer surface of the wall of the tube (17) abuts against the inner surface of said passage (13) when the beverage is pressurized.

A domestic beverage dispensing device having cooling means

FIELD OF THE INVENTION

The invention is related to a domestic beverage dispensing device comprising a compartment for enclosing a keg containing the beverage, and a tap for controlling the outflow of the beverage to be dispensed, and conduit means for supplying the beverage from the keg to said tap, and cooling means comprising a cooling member made of heat conductive material. The heat conductive material can be metal, preferably aluminum.

Although the invention is related to a beverage dispensing device, i.e. a device for dispensing any kind of beverage that has to be cooled down to a drinking temperature, hereinafter said device will also be referred to as beer dispensing device. However, other beverages can be treated in the same way.

BACKGROUND OF THE INVENTION

In a beer dispensing device for domestic use, the beer can be cooled while it is in the keg, before it is guided out of the keg to the beer dispensing tap of the device. Such a domestic beer dispensing device is disclosed in WO-A-2004/051163. In order to cool the beer contained in the keg, the keg can be placed in a refrigerator for some time before it is placed in the beer dispensing device. After it has been placed in the dispensing device, the keg can be kept cool in order to maintain its low temperature. For that purpose, the beer dispensing device can be provided with a cooling device having a relatively small capacity, for example a so called Peltier cooling device, being known in the art, which absorbs heat at one junction of paired metals or semiconductors and releases it at another junction thereof when electric current passes through these junctions.

Advantages of the Peltier cooling device are its limited dimensions and the fact that it can operate anywhere where electric power is available. However, such a cooling device has only a limited cooling capacity, so that it takes a relative long time when the beer in the keg has to be cooled down from the environmental temperature to the desired drinking temperature. Cooling down a keg containing 6 liters of beer from 23° C to 3° C may take more than 10 hours when it is cooled down by means of a Peltier cooling system in a domestic beer dispensing device. However, cooling down the beer in a much shorter time

would require a relatively powerful cooling device, for example a compression cooling device, which in turn would require a large supply of electric current and a large volume for accommodating the cooling device, which are both disadvantages in the case a domestic beer dispensing device.

5 Another problem with a domestic beverage dispensing device is the hygiene of the apparatus. All parts of the device that contact the beverage during normal use have to be rinsed and/or cleaned from time to time, or have to be renewed from time to time. These parts can be supplied together with the keg, which is a disposable part.

10 SUMMARY OF THE INVENTION

 An object of the invention is to provide a domestic beverage dispensing device for enclosing a keg containing a beverage, wherein the beverage to be dispensed can be cooled down from the environmental temperature to a drinking temperature without the need for a relatively large electric current supply to the beverage dispensing device.

15 Another object of the invention is to provide a beverage dispensing device for enclosing a keg containing a beverage, wherein the beverage to be dispensed can be cooled down from the environmental temperature to a drinking temperature in a relatively short period of time.

 Another object of the invention is to provide a beverage dispensing device for
20 enclosing a keg containing a beverage, wherein the beverage to be dispensed can be cooled down from the environmental temperature to a drinking temperature without the need for a large cooling device.

 In order to accomplish one or more of these objects, the cooling member of the domestic beverage dispensing device has a passage surrounded by the heat conductive
25 material of the cooling member, and a disposable tube of deformable material that extends through said passage forms at least a part of said conduit means for supplying the beverage from the keg to the tap, the outer diameter of said tube being smaller than the maximum inner diameter of the passage through said cooling member, and the deformability of the material of the disposable tube is such that the outer surface of the wall of the tube abuts
30 essentially against the complete inner surface of said passage when the beverage is under a pressure of at least 0.5 bar above environmental pressure.

 The beverage in the keg is pressurized in order to drive the beverage from the keg to the tap, and in the case of a carbonated beverage like beer, it has to be pressurized continuously. The pressure of the beverage can be between 0.5 bar and 1.5 bar above

environmental pressure, or sometimes even higher. The deformable wall of the tube will be pushed against the inner wall of the cooling member during the dispensing of the beverage, the pressure of the beverage in the tube being for example 1 bar. The pushing force will provide for intensive heat conduction.

5 As the outer diameter of the tube is smaller than the inner diameter of the passage, the tube can be a disposable element that can be easily placed in the passage of the cooling member and easily removed from the cooling member. For example, the disposable tube can be delivered together with the keg and renewed when replacing the keg. In case the deformability of the tube is so high that the non-pressurized tube is not a round or cylindrical
10 tube, the expression diameter refers to the transverse dimension of the tube at a low pressure inside the tube.

In beer dispensing devices for commercial use, for example for dispensing draft beer in taverns and the like, it is known to cool the beer in a chiller while it is guided from the keg to the beer dispensing tap. Such a method of cooling beer is efficient, because
15 only the beer flowing to the tap is being cooled, and the beer flowing out of the tap can have always the predetermined temperature, because it is cooled just before being dispensed.

WO01/92145 discloses a domestic beverage dispensing device comprising a compartment for enclosing a keg containing the beverage, and a tap for controlling the outflow of the beverage to be dispensed, and conduit means for supplying the beverage from
20 the keg to said tap, and cooling means comprising a cooling member made of heat conductive material, wherein the cooling member has a passage surrounded by said heat conductive material, whereby a disposable tube of deformable material forms at least a part of said conduit means and extends through said passage.

Preferably, the material of the disposable tube is plastic. The plastic material is
25 deformable, and preferably also elastic, so that it returns to its original dimensions after the pressure in it drops to environmental pressure. As a result, the disposable tube can be easily removed from the passage of the cooling member in order to be renewed.

In a preferred embodiment, the inner diameter of the passage varies over its length, so that the surface of the inner wall is enlarged, resulting in an increased heat transfer
30 between the wall and the beverage in the disposable tube. Preferably, the passage comprises at least one chamber, more preferably at least two chambers, having a larger inner diameter than other parts of the passage. A number of subsequent chambers provide a relatively large surface of the inner wall of the passage as well as some turbulence in the flow when the beverage flows through the passage.

In a preferred embodiment, the contents of the passage through the cooling member is at least 200 ml, so that a dispensing portion of the beverage can stay in the passage of the cooling member for some time before being dispensed. In addition, the heating capacity of the heat conductive material is sufficient to cool down a dispensing portion of the beverage in a relatively short time. Furthermore, it may be acceptable in the case of a domestic beverage dispenser that it takes a short time to cool the next portion of the beverage to be dispensed.

In a preferred embodiment, the cooling member has air conduits between said passage and the environment. The presence of such air conduits can avoid air inclusions between the deformable wall of the tube and the wall of the passage when the beverage in the tube is pressurized, which air inclusions would reduce the heat transfer in the cooling member.

The invention is also related to a disposable tube having a deformable wall for use in a domestic beverage dispensing device as described above.

The invention is furthermore related to a method of cooling a beverage in a domestic beverage dispensing device comprising a compartment for enclosing a keg containing the beverage, the beverage flowing through a tube to a tap for controlling the outflow of the beverage being dispensed, and wherein the tube is a disposable tube having a deformable wall, which tube is inserted in a passage through a heat conductive cooling member, and the beverage in the tube is subjected to a pressure, such that the deformable wall of the tube is pushed essentially against the complete inner wall of said passage.

BRIEF DESCRIPTION OF THE DRAWING

The invention will now be further elucidated by means of a description of an embodiment of a domestic beer dispensing device, comprising cooling means for cooling the beer, wherein reference is made to a schematic drawing of the device, in which components of the device are diagrammatically represented.

DETAILED DESCRIPTION OF AN EMBODIMENT

The beer dispensing device according to the described embodiment encloses a keg 1 containing beer 2. The means for pressurizing the beer and driving the beer out of the keg 1 through conduit 3 are not represented. The beer 2 can be contained in a flexible plastic bag, with the end of conduit 3 extending into the bag. The beer 2 can be driven out of the keg 1 by pumping air between the inner wall of the keg 1 and said flexible plastic bag. As an

alternative, the keg 1 can be filled with beer 2, and nitrogen or CO₂ is pumped into the keg 1 above the beer 2 in order to drive the beer 2 out of the keg 1.

As described above, the beer 2 is pressurized by pumping means, so that the beer 2 can be guided through conduit 3 towards a dispensing tap 5 having an outlet 6. After the tap 5 has been opened by moving handle 7 in the direction indicated by arrow 8, the beer 2 can flow from the keg 1, through the conduit 3 to the tap 5, in order to leave the dispensing device through outlet 6. Through said outlet, a individual portion of the beer can flow into a drinking glass 10.

A cooling device 11 is present in order to cool the beer from the environmental temperature, i.e. the temperature in the keg 1, to a drinking temperature, which cooling device 11 comprises a cooling member 12 consisting of a piece of heat conductive material, represented in a sectional view. The cooling member 12 has a passage 13, which passage 13 comprises three chambers 14, 15, 16, having an increased inner diameter. The part 17 of the conduit 3, inside the passage 13, is made of deformable material. When the beverage in conduit 3 is pressurized, the deformable material of said part 17 is pushed against the inner wall of passage 13 of the cooling member 12. The part 17 then essentially abuts against the complete inner wall of the passage 13.

In the drawing, part 17 of conduit 3, which has a deformable wall, and which will hereinafter be referred to as deformable tube 17, is shown in three stages of pressurizing.

In the right chamber 16, the deformable tube 17 is shown in its original stage, where no pressure is present inside it. The diameter of deformable tube 17 is smaller than the smallest inner diameter of passage 13 of cooling member 12. In the middle chamber 15, the deformable tube 17 is shown while the pressure inside it starts to increase, and in the left chamber 14 the deformable tube 17 is shown in its pressurized stage, where the wall of the tube 17 is pushed against the inner wall of passage 13. In order to avoid air inclusions between the deformable wall of the tube 17 and the inner wall of passage 13 during pressurizing, there are three air conduits 18 from the passage 13 to the outside of cooling member 12.

The deformable tube 17 is connected with the remaining part of conduit 3 by connection members 20, which members 20 are fixed to the deformable tube 17 and are clamped around the remaining part of conduit 3. The deformable tube 17, or the whole conduit 3, including deformable tube 17, is a disposable part of the beverage dispensing device; it can be renewed when a new keg 2 is placed in the device.

The cooling member 11 can be a cylindrical piece of heat conductive material, for example aluminum, but may have any other shape. It may comprise two parts being hingeabled with respect to each other, so that the deformable tube 17 can be easily placed in the passage 13. However, the transverse dimension of the deformable tube 17 is relatively small, so that it can be inserted in the passage 13 from one end of the passage 13.

The cooling device 11 may comprise a Peltier cooling system or another cooling system. The dimensions of the cooling member 12 are large enough to cool down an individual portion of the beverage, so that again and again an individual portion of a cool beverage can be dispensed after a short period of time, with the cooling member 12 being cooled continuously.

While the invention has been illustrated in the drawing and the foregoing description, such illustration and description are to be considered illustrative or exemplary and not restrictive; the invention is not limited to the disclosed embodiment. Any reference signs in the claims should not be construed as limiting the scope of the invention.

A domestic beverage dispensing device comprising conduit means 3 for supplying the beverage 2 from a keg 1 to a tap 5 and a cooling member 12. The cooling member 12 has a passage 13 surrounded by heat conductive material. A disposable tube 17 of deformable material forms at least a part of said conduit means 3 and extends through said passage 13. The deformability of the material of the disposable tube 17 is such that the outer surface of the wall of the tube 17 abuts against the inner surface of said passage 13 when the beverage is pressurized.

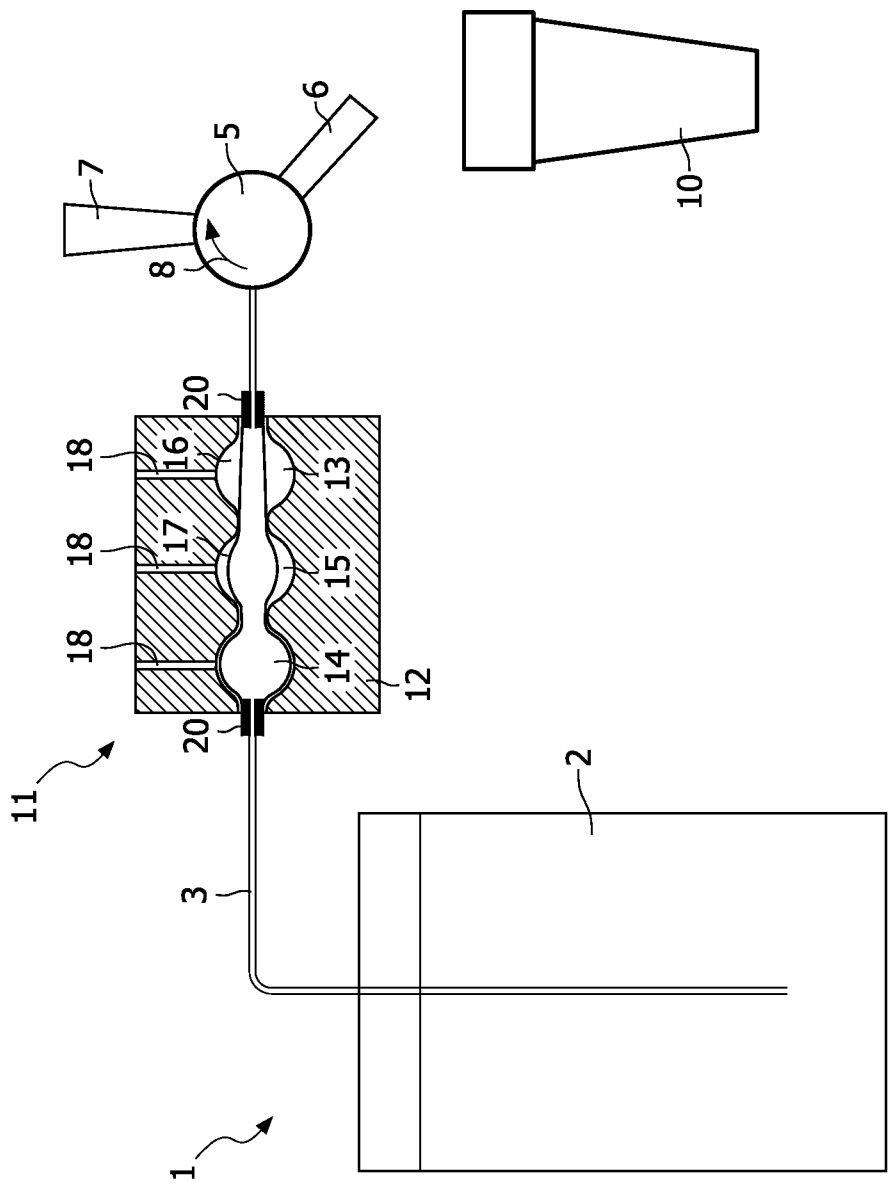
CLAIMS:

1. A domestic beverage dispensing device comprising a compartment for enclosing a keg (1) containing the beverage (2), and a tap (5) for controlling the outflow of the beverage to be dispensed, and conduit means (3) for supplying the beverage (2) from the keg (1) to said tap (5), and cooling means (11) comprising a cooling member (12) made of heat conductive material, characterized in that the cooling member (12) has a passage (13) surrounded by said heat conductive material, and a disposable tube (17) of deformable material forms at least a part of said conduit means (3) and extends through said passage (13), the outer diameter of said tube (17) being smaller than the maximum inner diameter of the passage (13) through said cooling member (12), and the deformability of the material of the disposable tube (17) is such that the outer surface of the wall of the tube (17) abuts essentially against the complete inner surface of said passage (13) when the beverage is under a pressure of at least 0.5 bar above environmental pressure.
2. A beverage dispensing device as claimed in any one of the preceding claims, characterized in that the material of the disposable tube (17) is plastic.
3. A beverage dispensing device as claimed in any one of the preceding claims, characterized in that the inner diameter of the passage (13) varies over the length of the passage.
4. A beverage dispensing device as claimed in claim 3, characterized in that the passage (13) comprises at least one chamber (14,15,16), preferably at least two chambers, having a larger inner diameter than other parts of the passage (13).
5. A beverage dispensing device as claimed in any one of the preceding claims, characterized in that the contents of the passage (13) through the cooling member (12) is at least 200 ml.

6. A beverage dispensing device as claimed in any one of the preceding claims, characterized in that said cooling member (12) has air conduits (18) between said passage (13) and the environment.

5 7. A disposable tube having a deformable wall for use in a domestic beverage dispensing device as described in any one of the preceding claims.

8. A method of cooling a beverage in a domestic beverage dispensing device comprising a compartment for enclosing a keg (1) containing the beverage (2), the beverage
10 (2) flowing through a tube (17) to a tap (5) for controlling the outflow of the beverage being dispensed, characterized in that the tube (17) is a disposable tube (17) having a deformable wall, which tube (17) is inserted in a passage (13) through a heat conductive cooling member (12), and the beverage in the tube (17) is subjected to a pressure, such that the deformable wall of the tube (17) is pushed essentially against the complete inner wall of said passage
15 (13).



INTERNATIONAL SEARCH REPORT

International application No

PCT/IB2009/055416

A. CLASSIFICATION OF SUBJECT MATTER

INV. B67D1/08

ADD. B67D1/04

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)

B67D

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 01/92145 A (HEINEKEN TECH SERVICES [NL]; KLAUW GUIDO PETRUS JOHANNES V [NL]; BAX) 6 December 2001 (2001-12-06) page 4, line 15 - page 5, line 25 -----	1,8
A	WO 2005/007559 A (HEINEKEN TECH SERVICES [NL]; PAKKERT ENGBERT HERMANNES [NL]; INNIKEL Q) 27 January 2005 (2005-01-27) page 4, line 30 - page 5, line 17 page 6, line 33 - page 7, line 30 -----	1,8

☐ 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

1 February 2010

Date of mailing of the international search report

05/02/2010

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

Desittere, Michiel

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB2009/055416

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.: 7
because they relate to subject matter not required to be searched by this Authority, namely:
see FURTHER INFORMATION sheet PCT/ISA/210
2. ☒ Claims Nos.: 7
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:
see FURTHER INFORMATION sheet PCT/ISA/210
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:

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.:

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.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.1

Claims Nos.: 7

The initial phase of the search revealed a very large number of documents relevant to the issue of novelty. So many documents were retrieved that it is impossible to determine which parts of claim 7 may be said to define subject-matter for which protection might legitimately be sought (Article PCT). For these reasons, a meaningful search of the whole claimed subject matter of claim 7 could not be carried out (Rule ... PCT). The extent of the search was consequently limited.

Continuation of Box II.2

Claims Nos.: 7

The initial phase of the search revealed a very large number of documents relevant to the issue of novelty. So many documents were retrieved that it is impossible to determine which parts of claim 8 may be said to define subject-matter for which protection might legitimately be sought (Article 6 PCT). For these reasons, a meaningful search of the whole claimed subject matter of claim 8 could not be carried out. The extent of the search was consequently limited (Article 17(2) PCT).

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.2), should the problems which led to the Article 17(2) declaration be overcome.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IB2009/055416

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 0192145	A	06-12-2001	AR 028656 A1 21-05-2003
			AT 309959 T 15-12-2005
			AT 404492 T 15-08-2008
			AT 399143 T 15-07-2008
			AT 455075 T 15-01-2010
			AU 6440301 A 11-12-2001
			AU 6440401 A 11-12-2001
			AU 2001264403 B2 16-02-2006
			BG 107342 A 30-01-2004
			BR 0111374 A 13-05-2003
			CA 2411026 A1 06-12-2001
			CN 1440366 A 03-09-2003
			CN 1440367 A 03-09-2003
			CN 1559881 A 05-01-2005
			CZ 20023941 A3 18-06-2003
			DE 60115023 D1 22-12-2005
			DE 60115023 T2 27-07-2006
			DK 1284918 T3 27-03-2006
			DK 1284920 T3 08-12-2008
			DK 1555240 T3 29-09-2008
			EC SP024395 A 25-07-2003
			EE 200200661 A 15-06-2004
			EG 22484 A 26-02-2003
			EP 1284918 A1 26-02-2003
			EP 1284920 A1 26-02-2003
			EP 1473271 A2 03-11-2004
			EP 1555240 A2 20-07-2005
			EP 1600421 A1 30-11-2005
			ES 2253386 T3 01-06-2006
			ES 2311520 T3 16-02-2009
			ES 2309649 T3 16-12-2008
			HK 1053821 A1 24-02-2006
			HK 1053822 A1 24-10-2008
			HK 1078558 A1 29-08-2008
			HR 20020949 A2 28-02-2005
			HU 0302354 A2 28-10-2003
			IL 153161 A 03-12-2007
			IS 6641 A 29-11-2002
			JP 2003534997 T 25-11-2003
			JP 2003535000 T 25-11-2003
			MA 25752 A1 01-04-2003
			MX PA02011847 A 14-05-2003
			WO 0192142 A1 06-12-2001
			NL 1015368 C2 12-12-2001
			NO 20025752 A 31-01-2003
			NZ 523136 A 24-09-2004
WO 0192145	A		OA 12280 A 11-05-2006
			PL 358921 A1 23-08-2004
			PT 1284920 E 20-11-2008
WO 2005007559	A	27-01-2005	AT 370913 T 15-09-2007
			AU 2004257112 A1 27-01-2005
			BR PI0412864 A 03-10-2006
			CA 2533028 A1 27-01-2005
			CN 1839092 A 27-09-2006
			DE 602004008477 T2 15-05-2008
			DK 1651556 T3 07-01-2008

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IB2009/055416

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
		EP 1651556 A2	03-05-2006
		ES 2293336 T3	16-03-2008
		HK 1090017 A1	26-10-2007
		HR 20070526 T3	31-12-2007
		JP 2006528113 T	14-12-2006
		KR 20060126420 A	07-12-2006
		NL 1023967 C2	24-01-2005
		NZ 544758 A	28-03-2008
		PT 1651556 E	03-12-2007
		US 2008156828 A1	03-07-2008
		ZA 200600483 A	30-05-2007
