

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 19339 WO	FOR FURTHER ACTION	See Form PCT/IPEA/416																								
International application No. PCT/US15/30832	International filing date (<i>day/month/year</i>) 14 May 2015 (14.05.2015)	Priority date (<i>day/month/year</i>) 03 June 2014																								
International Patent Classification (IPC) or national classification and IPC IPC: Please See Continuation Sheet USPC: 222/58,71,77;73/198																										
Applicant OWENS-BROCKWAY GLASS CONTAINER INC.																										
1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36. 2. This REPORT consists of a total of <u>2</u> sheets, including this cover sheet. 3. This report is also accompanied by ANNEXES, comprising: a. ☒ (<i>sent to the applicant and to the International Bureau</i>) a total of <u>8</u> sheets, as follows: ☒ sheets of the description, claims and/or drawings which have been amended and/or sheets containing rectifications authorized by this Authority, unless those sheets were superseded or cancelled, and any accompanying letters (see Rules 46.5, 66.8, 70.16, 91.2, and Section 607 of the Administrative Instructions). ☐ sheets containing rectifications, where the decision was made by this Authority not to take them into account because they were not authorized by or notified to this Authority at the time when this Authority began to draw up this report, and any accompanying letters (Rules 66.4bis, 70.2(e), 70.16 and 91.2). ☐ superseded sheets and any accompanying letters, where this Authority either considers that the superseding sheets contain an amendment that goes beyond the disclosure in the international application as filed, or the superseding sheets were not accompanied by a letter indicating the basis for the amendments in the application as filed, as indicated in item 4 of Box No.I and the Supplemental Box (see Rule 70.16(b)). b. ☐ (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) _____ containing a sequence listing, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see paragraph 3bis of Annex C of the Administrative Instructions).																										
4. This report contains indications relating to the following items: <table style="width: 100%; border: none;"> <tr> <td style="width: 10%;">☒</td> <td style="width: 30%;">Box No. I</td> <td style="width: 60%;">Basis of the report</td> </tr> <tr> <td>☐</td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td>☐</td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td>☐</td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td>☒</td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td>☐</td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td>☐</td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td>☐</td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table>			☒	Box No. I	Basis of the report	☐	Box No. II	Priority	☐	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	☐	Box No. IV	Lack of unity of invention	☒	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement	☐	Box No. VI	Certain documents cited	☐	Box No. VII	Certain defects in the international application	☐	Box No. VIII	Certain observations on the international application
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Date of submission of the demand 04 April 2016 (04.04.2016)	Date of completion of this report 13 May 2016 (13.05.2016)																									
Name and mailing address of the IPEA/ US Mail Stop PCT, Attn: IPEA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201	Authorized officer Clayton LaBalle Telephone No. 571-272-2800																									

Box No. I Basis of the report1. With regard to the **language**, this report is based on:

- ☒ the international application in the language in which it was filed.
- ☐ a translation of the international application into English which is the language of a translation furnished for the purposes of:
- ☐ international search (Rules 12.3(a) and 23.1(b)).
- ☐ publication of the international application (Rule 12.4(a)).
- ☐ international preliminary examination (Rules 55.2(a) and/or 55.3(a) and (b)).

2. With regard to the **elements** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

- ☐ the international application as originally filed/furnished
- ☒ the description:
 pages 1-16 as originally filed/furnished
 pages* NONE received by this Authority on _____
 pages* NONE received by this Authority on _____
- ☒ the claims:
 pages NONE as originally filed/furnished
 pages* NONE as amended (together with any statement) under Article 19
 pages* 17-19/1 received by this Authority on 04 April 2016 (04.04.2016)
- ☒ the drawings:
 pages 1/6-6/6 as originally filed/furnished
 pages* NONE received by this Authority on _____
 pages* NONE received by this Authority on _____
- ☐ a sequence listing - see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since either they are considered to go beyond the disclosure as filed, or they were not accompanied by a letter indicating the basis for the amendments in the application as filed, as indicated in the Supplemental Box (Rules 70.2(c) and (c-bis)):

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____

5. ☐ This report has been established:

- ☐ taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rules 66.1(d-bis) and 70.2(e)).
- ☐ without taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rules 66.4bis) and 70.2(e)).

6. ☒ With regard to top-up searches (Rules 66.1ter and 70.2(f)):

- ☒ A top-up search was carried out by this Authority on 13 May 2016 (13.05.2016)
- ☒ Additional relevant documents have been discovered during the top-up search.
- ☐ No top-up search was carried out by this Authority because it would serve no useful purpose.

7. ☐ Supplementary international search report(s) from Authority(ies) _____ has/have been received and taken into account in establishing this report (Rule 45bis.8(b) and (c)).

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/US15/30832**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)

Claims 2, 5, 7, 8, 10, 11, 14, 16, 17 YESClaims 1, 3, 4, 6, 9, 12, 13, 15, 18 NO

Inventive Step (IS)

Claims NONE YESClaims 1-18 NO

Industrial Applicability (IA)

Claims 1-18 YESClaims NONE NO

2. Citations and Explanations (Rule 70.7)

Please See Continuation Sheet

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of:

Continuation of IPC:

G01F 9/00(2006.01),**1/00**(2006.01);**B67D 3/00**(2006.01);**G01G 17/06**(2006.01);**G01F 23/20**(2006.01)

V. 2. Citations and Explanations:

Reference is made to the following documents:

- D1 CA 2 734 656 A1 (PORASZKA TOMASZ [CA]; KAUFMAN JEFFREY [CA]) 18 September 2012
- D2 US 2011/165/034 A1 (CARLSON BRIAN P [US] ET AL) 7 July 2011
- D3 US 2010/006599 A1 (CEBULSKI JAMES [US]) 14 January 2010
- D4 US 4 944 428 A (GMUR [CH] ET AL) 31 July 1990
- D5 US 5 040 699 A (GANGEMI) 20 August 1991

The present application does not meet the criteria of Article 33(2) PCT, because the subject-matter of claims 1 and 10 is not new.

Document D3 discloses from page 2, paragraphs [0020] page 6 paragraph [0068], a fluid flow testing apparatus for measuring a pour profile of a container, namely a bottle, the apparatus comprising:

a rotatable container carrier (150, Fig. 1);

an assembly (insofar that some sort of assembly is required for the tilt shown in Figs. 1) that rotates the container between a first position allowing fluid to be retained within the container and a second position causing fluid to be poured from the container (paragraph [0021]); sensors that sense weight as fluid is poured from the container (paragraph [0054]); and

a controller that receives input signals from the sensors to record change in weight of the container over time as liquid is poured from the

Supplemental Box

container as the container is rotated, wherein the change of weight of the container over time establishes a graphical pour profile for the container, such that the graphical pour profiles of different containers are comparable to determine which containers pour faster or slower and/or exhibit more glugging (paragraphs [0054] and [0057]-[0059]).

The same reasoning applies to the subject-matter of the corresponding independent claim 10, which therefore is also considered not new.

The subject-matter of claims 1 and 10 lacks furthermore an inventive step over the teachings of documents D1 and D2 which teach a rotatable container, an assembly that rotates the container, sensors that sense the weight of the container, and a controller that records the change in weight of the container.

The subject-matter of claims 1 and 10 differ from the apparatus in D1 and D2 by way of the graphical pour profiles. However, these graphical pour profiles are readily used in the art to determine pour characteristics, as evident in D3.

Dependent claims 2,5,7,8,11,14,16 and 17 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect to inventive stem. See document D1, page 8, line 29 to page 9 line 2, for the features of claims 2,5,11,14 and the document D2 figures 3A and 5 for the features of claims 7,8,16 and 17.

Dependent claims 3,4,6,9,12,13,15 and 18 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect to novelty. See document D3, paragraphs 23,24 for the features of claims 3,4,12 and 13. The features of claims 6,9,15 and 18 are obvious constructional details.

----- NEW CITATIONS -----

US 5,040,699 A (GANGEMI) 20 August 1991, see Col. 4, lines 39-54.

US 4,944,428 A (GMUR et al) 31 July 1990, see whole document.

Claims

1. A fluid flow testing apparatus (10) comprising:
a rotatable container carrier (14);
an assembly (16) that rotates the container between a first position allowing fluid to be
5 retained within the container and a second position causing fluid to be poured from the container;
sensors (51-53) that sense weight as fluid is poured from the container; and
a controller (60) that receives input signals from the sensors to record change in weight of
the container over time as liquid is poured from the container as the container is rotated, wherein
the change of weight of the container over time establishes a graphical pour profile for the
10 container, such that graphical pour profiles of different containers are comparable to determine
which containers pour faster or slower and/or exhibit more glugging.
2. The apparatus of claim 1 wherein the sensors include load cells.
- 15 3. The apparatus of claim 1 further comprising:
one or more ambient condition sensors (59, 73, 74, 75) to measure and record ambient
conditions during the operation of the fluid flow test apparatus.
4. The apparatus of claim 1 wherein at least one of a temperature sensor (73), a
20 barometric pressure sensor (74), a humidity sensor (75), and an accelerometer (59) comprise the
one or more ambient condition sensors.
5. The apparatus of claim 1 further comprising:
a collection assembly (18) to receive fluid poured from the container.
- 25 6. The apparatus of claim 5 further comprising:
a temperature sensor (29) in the collection assembly to sense the temperature of fluid
poured from the container.
- 30 7. The apparatus of claim 1 further comprising:

a prime mover (43) comprising a portion of the rotation assembly, wherein the prime mover is coupled to the rotatable container carrier.

8. The apparatus of claim 1 further comprising:

5 a load plate (50) that supports weight of the container carrier and the container; and load cells supporting the load plate, wherein the load cells comprise the weight sensors.

9. The apparatus of claim 1 further comprising:

10 a sensor flag (46) coupled to the rotatable container carrier and rotatable with the carrier; and sensors (77, 78) on the apparatus that sense the rotation of the sensor flag.

10. A fluid flow testing method comprising:

positioning a first container in a rotatable container carrier (14);
15 rotating the first container between a first position allowing fluid to be retained within the first container and a second position causing fluid to be poured from the first container;
sensing the weight of the first container;
recording a change in weight of the first container over time as liquid is poured from the first container as the first container is rotated in order to establish a first graphical pour profile
20 for the first container;
positioning a second container in the rotatable container carrier (14);
rotating the second container between the first position allowing fluid to be retained within the second container and the second position causing fluid to be poured from the second container;
25 sensing the weight of the second container;
recording a change in weight of the second container over time as liquid is poured from the second container as the second container is rotated in order to establish a second graphical pour profile for the second container; and
comparing the first and second graphical pour profiles to determine which container
30 pours faster or slower and/or exhibits more glugging.

11. The method of claim 10 further comprising:
sensing the change of weight of the container in order to sense the pouring of fluid from
the container.
- 5 12. The method of claim 10 further comprising:
measuring and recording ambient conditions during the operation of the fluid flow test
apparatus using one or more ambient condition sensors (59, 73, 74, 75).
- 10 13. The method of claim 12 further comprising:
measuring at least one of ambient vibrations, the ambient temperature, the barometric
pressure, and the humidity in order to measure the ambient conditions.
14. The method of claim 10 further comprising:
receiving fluid poured from the container in a collection assembly (18).
- 15 15. The method of claim 14 further comprising:
sensing the temperature of fluid poured from the container using a temperature sensor
(29) in the collection assembly.
- 20 16. The method of claim 10 further comprising:
coupling a prime mover (43) to the rotatable container carrier in order to rotate the
container between the first and second positions.
- 25 17. The method of claim 10 further comprising:
supporting the weight of the container carrier and the container on a load plate (50);
supporting the load plate on load cells (51-53); and,
sensing the change of weight of the container and as fluid is poured from the container
using the load cells.
- 30 18. The method of claim 10 further comprising:
mounting a sensor flag (46) on the rotatable container carrier;

rotating the sensor flag with the carrier; and
sensing the rotation of the sensor flag.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
PATENT COOPERATION TREATY

International Application No.: PCT/US2015/030832
Applicant: Owens-Brockway Glass Container Inc.
International Filing Date: 14 May 2015
Attorney Docket No.: 19339 WO
In Response to: Search Report and Written Opinion
Mailed 11 August 2015

RULE 34 AMENDMENT AND RESPONSE TO WRITTEN OPINION

Mail Stop PCT
Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

This is in response to the Search Report and Written Opinion mailed 11 August 2015 in connection with the subject application. The period for response expires twenty-two months from the 03 June 2014 priority date - *i.e.*, on 03 April 2016.

Please amend the subject PCT application by substituting enclosed new pages 17-19a containing new claims 1-18 for original pages 17-19 containing original claims 1-18 of the application as filed.

Claim 1 corresponds to original claim 1 of the application as filed, and is amended to address Item V of the Written Opinion.

Claims 2-9 correspond to original claims 2-9 of the application as filed, and are unchanged.

Claim 10 corresponds to original claim 10 of the application as filed, and has been amended to address Item V of the Written Opinion.

1, 03/05/2010/30852 04-04-2010

Claims 11-18 correspond to original claims 11-18 of the application as filed, and are unchanged.

Item V

Original claims 1-18 of the application as filed were deemed to lack novelty and/or inventive step over one or more of the following cited documents: D1-D3.

Amended independent claim 1 recites a fluid flow testing apparatus comprising:

a rotatable container carrier;

an assembly that rotates the container between a first position allowing fluid to be retained within the container and a second position causing fluid to be poured from the container;

sensors that sense weight as fluid is poured from the container; and

a controller that receives input signals from the sensors to record change in weight of the container over time as liquid is poured from the container as the container is rotated, wherein the change of weight of the container over time establishes a graphical pour profile for the container, such that graphical pour profiles of different containers are comparable to determine which containers pour faster or slower and/or exhibit more glugging.

Amended independent claim 10 recites a fluid flow testing method comprising:

positioning a first container in a rotatable container carrier;

rotating the first container between a first position allowing fluid to be retained within the first container and a second position causing fluid to be poured from the first container;

sensing the weight of the first container;

recording a change in weight of the first container over time as liquid is poured from the first container as the first container is rotated in order to establish a first graphical pour profile for the first container;

positioning a second container in the rotatable container carrier;

rotating the second container between the first position allowing fluid to be retained within the second container and the second position causing fluid to be poured from the second container;

sensing the weight of the second container;

recording a change in weight of the second container over time as liquid is poured from the second container as the second container is rotated in order to establish a second graphical pour profile for the second container; and

comparing the first and second graphical pour profiles to determine which container pours faster or slower and/or exhibits more glugging.

D1 discloses a beverage decanting device that operates automatically to produce consistently quick pours from bottle to glass without excessive frothing or spillage.

D2 discloses a chemical product dispenser that controls dispensing of a chemical product based on a change in weight of the chemical product remaining in the dispenser. The dispenser includes an isolation mechanism so that the dispenser may be

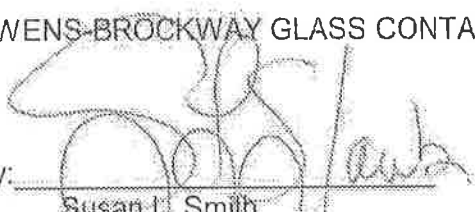
loaded with a supply of chemical product with a reduced risk of damage to a weight measurement instrument.

D3 identifies a need to monitor amounts of fluid transferred between vessels, for example, in repair shops, laboratories, plants, and kitchens. Thus, D3 discloses a volumetric measurement device including an accelerometer for detecting the angle of tilt/tip of a container, a fluid property processor to provide a fluidic property value of a fluid, a flow-rate processor to continuously calculate a rate of flow of the fluid poured from the container based on the angle of tilt/tip of the apparatus, the fluidic property value, and a present volume of fluid within the container.

Although documents D1-D3 generally disclose various methods and systems aimed at improving dispensing of content from one container to another, none of documents D1-D3 disclose, teach, or suggest the subject matter of amended independent claims 1 and 10.

It therefore is believed and respectfully submitted that all claims meet the novelty, inventive step, and industrial applicability requirements of the PCT.

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SBW/dim