

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 65051769PC02	FOR FURTHER ACTION		See Form PCT/IPEA/416
International application No. PCT/US2018/058569	International filing date (<i>day/month/year</i>) 31 October 2018 (31.10.2018)	Priority date (<i>day/month/year</i>) 31 October 2017 (31.10.2017)	
International Patent Classification (IPC) or both national classification and IPC IPC: A47K 10/32, 10/38, 10/36, 5/12 CPC: A47K 10/32, 10/38, 10/36, 5/12			
Applicant KIMBERLY-CLARK WORLDWIDE, 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 5 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:

- a. ☒ (*sent to the applicant and to the International Bureau*) a total of 0 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which have been amended and/or sheets containing rectifications authorized by this Authority, unless those sheets were superseded or cancelled, and any accompanying letters (see Rules 46.5, 66.8, 70.16, 91.2, and Section 607 of the Administrative Instructions).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 - ☐ superseded sheets and any accompanying letters, where this Authority either considers that the superseding sheets contain an amendment that goes beyond the disclosure in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. ☐ (*sent to the International Bureau only*) a total of (indicate type and number of electronic carrier(s)) _____ containing a sequence listing, in the form of an Annex C/ST.25 text file, as indicated in the Supplemental Box Relating to Sequence Listing (see paragraph 3ter of Annex C of the Administrative Instructions).

4. This report contains indications relating to the following items:

- ☒ 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

Date of submission of the demand 29 August 2019 (29.08.2019)	Date of completion of this report 27 September 2019 (27.09.2019)
Name and mailing address of the IPEA/US COMMISSIONER FOR PATENTS MAIL STOP PCT, ATTN: IPEA/US P.O. BOX 1450 ALEXANDRIA, VA 22313-1450, UNITED STATES OF AMERICA	Authorized officer JONATHAN LIU
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Box No. I Basis of the report

1. 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 _____ 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, or
- ☒ the description:
pages 1-13 as originally filed/furnished.
pages* _____ received by this Authority on _____
pages* _____ received by this Authority on _____
- ☒ the claims:
Nos. 1-16 as originally filed/furnished.
Nos.* _____ as amended (together with any statement) under Article 19
Nos.* _____ received by this Authority on _____
- ☒ the drawings:
pages 1 and 2 as originally filed/furnished.
pages* _____ received by this Authority on _____
pages* _____ 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 27 September 2019 (27.09.2019)
- ☐ 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."

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Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement		
1. Statement			
Novelty (N)	Claims	1-16	YES
	Claims	NONE	NO
Inventive step (IS)	Claims	NONE	YES
	Claims	1-16	NO
Industrial applicability (IA)	Claims	1-16	YES
	Claims	NONE	NO
2. Citations and explanations (Rule 70.7)			
----- EXPLANATION ----- 1. Novelty and Inventive Step 1.1 Independent Claim 1 D1, which is considered to be the closest prior art to the subject matter of claim 1, discloses a dispenser (10) for dispensing of a product (14), the dispenser (10) comprising: a consumable product storage area configured to store the product (14) within the dispenser (10); a dispensing mechanism operatively coupled to the product (14) and configured to facilitate a movement of a portion of product (14), wherein the movement of the product (14) causes a vibration; a sensor (56) detecting the vibration; and a data communications unit (1038) communicating with the sensor (56) to receive identification information about the product (14) (see claims 1, 19, 22; and figures 1, 31). Claim 1 differs from D1 in that a value of a vibrational characteristic changes as a function of an amount of consumable product remaining in a dispenser. However, this feature would be easily conceived by a person skilled in the art from the feature of D1 considering that the sensor (56) detects the vibration to acquire identification information about the product (14) (see claim 19; and figure 1). Accordingly, claim 1 would have been obvious over D1. Therefore, claim 1 lacks an inventive step under PCT Article 33(3). 1.2.1 Concerning Claim 2 The additional feature of claim 2 is identical to the feature of D1 in that the sensor (56, 2020) is an accelerometer (see paragraph [0260]; and figure 1). Accordingly, claim 2 would have been obvious over D1. Therefore, claim 2 lacks an inventive step under PCT Article 33(3). 1.2.2 Concerning Claims 3-8 The additional features of claims 3-8 are merely matters of design option when the general knowledge in relevant field of the art is used. Accordingly, claims 3-8 would have been obvious over D1. Therefore, claims 3-8 lack an inventive step under PCT Article 33(3). 1.2.3 Concerning Claim 9 The additional feature of claim 9 is identical to the feature of D1 in a dispenser housing (16) at least partially enclosing the product storage area, wherein the sensor (56) is mounted to the housing (16) (see paragraph [0108]; and figure 1). Accordingly, claim 9 would have been obvious over D1. Therefore, claim 9 lacks an inventive step under PCT Article 33(3). 1.2.4 Concerning Claim 10 The additional feature of claim 10 is the general knowledge in relevant field of the art, so it can be easily derived by a person skilled in the art. Accordingly, claim 10 would have been obvious over D1. Therefore, claim 10 lacks an inventive step under PCT Article 33(3). 1.2.5 Concerning Claim 11			

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	The additional feature of claim 11 is identical to the feature of D1 in that the data communications unit (1038) comprises a wireless transmitter (see paragraph [0167]; and Figure 17). Accordingly, claim 11 would have been obvious over D1. Therefore, claim 11 lacks an inventive step under PCT Article 33(3). 1.2.6 Concerning Claim 12 The additional feature of claim 12, characterized in that the vibrational characteristic changes as a linear function of the amount of consumable product remaining, would be easily conceived by a person skilled in the art from the feature of D1 considering that the sensor (56) detects the vibration to acquire identification information about the product (14) (see claim 19; and figure 1). Accordingly, claim 12 would have been obvious over D1. Therefore, claim 12 lack an inventive step under PCT Article 33(3). 1.3 Independent Claim 13 D1, which is considered to be the closest prior art to the subject matter of claim 13, discloses a method for monitoring a product (14), the method comprising the steps of: mounting a sensor (56) to a dispenser (10), wherein the sensor (56) detects the vibration; detecting the vibration; and providing an identification information about the product to a remote receiver (see paragraphs [0003], [0108]; claim 19; and figures 1, 31). Claim 13 differs from D1 in that a value of a vibrational characteristic changes as a function of an amount of consumable product remaining in a dispenser. However, this feature would be easily conceived by a person skilled in the art from the feature of D1 considering that the sensor (56) detects the vibration to acquire identification information about the product (14) (see claim 19; and figure 1). Accordingly, claim 13 would have been obvious over D1. Therefore, claim 13 lacks an inventive step under PCT Article 33(3). 1.4 Dependent Claims 14-16 1.4.1 Concerning Claim 14 The additional feature of claim 14 is identical to the feature of D1 in that the sensor (56, 2020) is an accelerometer (see paragraph [0260]; and Figure 1). Accordingly, claim 14 would have been obvious over D1. Therefore, claim 14 lacks an inventive step under PCT Article 33(3). 1.4.2 Concerning Claim 15 The additional features of claim 15, characterized in that: the dispenser is a motorized hand towel dispenser for dispensing paper towels from a roll and comprises arms holding the roll; and the method comprises the step of placing the vibration sensing device on one of the arms, would be easily conceived by a person skilled in the art from the feature of D1 considering that the dispenser (10) is a paper towel dispenser, wherein the sensor (56) is mounted to the dispenser (10) (see paragraphs [0018], [0108]; and figure 1). Accordingly, claim 15 would have been obvious over D1. Therefore, claim 15 lack an inventive step under PCT Article 33(3). 1.4.3 Concerning Claim 16 The additional features of claim 16, characterized in that: the dispenser is a liquid soap dispenser for dispensing liquid soap and comprises a bottle containing the liquid soap; and the method comprises the step of placing the vibration sensing device on the bottle, would be easily conceived by a person skilled in the art from the feature of D1 considering that the dispenser (10) is a soap dispenser, wherein the sensor (56) is mounted to the dispenser (10) (see paragraphs [0018], [0108]; and figure 1). Accordingly, claim 16 would have been obvious over D1. Therefore, claim 16 lack an inventive step under PCT Article 33(3). (*Note: With respect to 1. Novelty and Inventive step, it seems that claims 1, 13 would have been obvious over D2, D3 or D4.) 2. Industrial Applicability Claims 1-16 are industrially applicable under PCT Article 33(4). 3. Response to Arguments Applicant argues D1 does not teach "a vibration sensing device configured to sense a vibrational characteristic of the vibration event, wherein a value of the vibrational characteristic changes as a function of an amount of consumable product remaining in the dispenser". The examiner disagrees because paragraph 0226 teaches "Identification information" of the product 2014 is meant to be broad enough to include <u>knowledge of whether the product 2014 is in fact present</u>

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and/or the particular type of product 2014 that is present. (emphasis added). Therefore, the sensor of D1 does detect if product is remaining in the dispenser.	