

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 65051774PC02	FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/US2018/067818	International filing date (day/month/year) 28 December 2018 (28.12.2018)	Priority date (day/month/year) 29 December 2017 (29.12.2017)
International Patent Classification (IPC) or both national classification and IPC IPC: A47K 5/06, 5/12; G06Q 50/10 CPC: A47K 5/06, 5/12; G06Q 50/10		
Applicant KIMBERLY-CLARK WORLDWIDE, INC.		

- 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.
- This REPORT consists of a total of 3 sheets, including this cover sheet.
- This report is also accompanied by ANNEXES, comprising:
 - ☒ (sent to the applicant and to the International Bureau) a total of 4 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which have been amended and/or sheets containing rectifications authorized by this Authority, unless those sheets were superseded or cancelled, and any accompanying letters (see Rules 46.5, 66.8, 70.16, 91.2, and Section 607 of the Administrative Instructions).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 - ☐ superseded sheets and any accompanying letters, where this Authority either considers that the superseding sheets contain an amendment that goes beyond the disclosure in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)).
 - ☐ (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).

- 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 October 2019 (29.10.2019)	Date of completion of this report 22 January 2020 (22.01.2020)
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 Facsimile No. (571)273-8300	Authorized officer GENE CRAWFORD Telephone No. (571) 272-6911

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/US2018/067818

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. _____ as originally filed/furnished.
 Nos.* _____ as amended (together with any statement) under Article 19
 Nos.* 1-10 received by this Authority on 29 October 2019 (29.10.2019)
- ☒ the drawings:
 pages 1/3-3/3 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 January 2020 (27.01.2020)
- ☐ 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/US2018/067818

Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement		
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1. Statement

Novelty (N)

Claims 1-18 YES

Claims _____ NO

Inventive step (IS)

Claims 1-18 YES

Claims _____ NO

Industrial applicability (IA)

Claims 1-18 YES

Claims _____ NO

2. Citations and explanations (Rule 70.7)

----- EXPLANATION -----

The amended independent claims contain the feature previously disclosed in dependent claim 5. This feature was found to contain novel characteristics over the prior art of record.

1. A monitoring system comprising:

a plurality of dispensers each configured to be located in a washroom and dispense a respective consumable hygiene product through a dispense cycle, wherein each of the dispensers is associated with a water source device;

a water flow measurement device configured to measure water flow to the water source devices;

and

a data processing apparatus configured to receive indications of dispense cycles from the dispensers, to receive a water flow measurement from the water flow measurement device, determine which water source device was active by associating one of the water source devices with one of the dispensers based on a first time of the dispense cycle of the one of the dispensers and a second time of the water flow measurement, and determine a water flow fault of the one of the water source devices based on a comparison of the first and second times.

2. A monitoring system comprising:

a plurality of dispensers each configured to be located in a washroom and dispense a respective consumable hygiene product through a dispense cycle, wherein each of the dispensers is associated with a water source device;

a water flow measurement device configured to measure water flow to the water source devices;

and

a data processing apparatus configured to receive indications of dispense cycles from the dispensers, to receive a water flow measurement from the water flow measurement device and determine which water source device was active by associating one of the water source devices with one of the dispensers based on a first time of the dispense cycle of the one of the dispensers and a second time of the water flow measurement, and

wherein associating one of the water source devices with one of the dispensers based on a first time of the dispenser cycle of the one of the dispensers and a second time of the water flow measurement comprises comparing the first time to the second time.

3. The monitoring system of claim 2, wherein the plurality of dispensers comprises at least one of a bath tissue dispenser, a paper towel dispenser, and a soap dispenser.

4. The monitoring system of claim 2, wherein the water source devices comprise a faucet, a urinal and a toilet.
5. The monitoring system of claim 2 comprising determining whether the first and second times are within a specified time range.
6. The monitoring system of claim 5 comprising in response to determining the first and second times are within the specified time range, determining that the water source device associated with the one of the dispensers was activated.
7. The monitoring system of claim 6 comprising monitoring the water flow for a time period after the first and second times and determining that there is a water flow fault in response to a water flow irregularity during the time period, wherein the water flow fault is with the activated water source device.
8. The monitoring system of claim 7, wherein the water flow fault comprise a water leak.
9. The monitoring system of claim 7 comprising a secondary water measurement device configured to measure water flow from the water source devices.
10. The monitoring system of claim 9, wherein the data processing apparatus is configured to receive a secondary water flow measurement from the secondary water flow measurement device and determine a secondary water flow fault in response to determining a low or no water flow condition from the activated water source device.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: KIMBERLY-CLARK WORLDWIDE, INC.
Int'l. Appln. No.: PCT/US2018/067818
Int'l. Filing Date: 28 Dec 2018
Title: WASHROOM MONITORING SYSTEM
Docket No.: 65051774PCT02
Date: October 29, 2019

RESPONSE TO WRITTEN OPINION AND AMENDMENT UNDER PCT ARTICLE 34

Mail Stop PCT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir/Madam:

In response to the International Search Report and Written Opinion prepared by the International Searching Authority dated April 17, 2019, Applicant respectfully requests that the following remarks be considered in the above-referenced application pursuant to PCT Article 34.

Amendments to the Claims:

Claims 1, 2 and 6 have been amended, and claims 5 and 12-18 have been cancelled without prejudice or disclaimer to the subject matter therein. Support for the amendments and new claims can be found, for example, in the claim set as originally filed.

Statement:

The Written Opinion indicates that claim 5 is novel, has inventive step and industrial applicability. As such, the features of claim 5 have been incorporated into claim 2. Claims 6-11, as originally filed, directly or indirectly, depended from claim 5 and now, as amended, depend, directly or indirectly, from claim 2. Accordingly, Applicant respectfully submits that claim 2, and all claims depending therefrom, satisfies the requirements of PCT Article 33(2), (3) and (4).

Claim 1 has also been amended to include features similar to those of originally filed claim 5. Accordingly, Applicant respectfully submits that claim 1 also satisfies the requirements of PCT Article 33(2), (3) and (4).

Conclusion:

Applicant respectfully submits that all of the claims of the present application satisfy the requirements of

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Int'l Appln. No.: PCT/US2018/067818

novelty, inventive step, and industrial applicability. In light of the foregoing, issuance of a favorable International Preliminary Report on Patentability is respectfully requested.

Respectfully submitted,

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