

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:
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Date of mailing
(day/month/year) **17 April 2019 (17.04.2019)**

Applicant's or agent's file reference 65051774PC02		FOR FURTHER ACTION See paragraph 2 below	
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 A47K 5/06(2006.01)i, A47K 5/12(2006.01)i, G06Q 50/10(2012.01)i			
Applicant KIMBERLY-CLARK WORLDWIDE, INC.			

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ 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 Rule 43bis. I(a)(i) 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

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.
For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA/KR International Application Division Korean Intellectual Property Office 189 Cheongsa-ro, Seo-gu, Daejeon, 35208, Republic of Korea Facsimile No. +82-42-481-8578	Date of completion of this opinion 17 April 2019 (17.04.2019)	Authorized officer HWANG, Chan Yoon Telephone No. +82-42-481-3347
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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US2018/067818

Box No. 1 Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of :

- ☒ 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))

2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*. I(a))

3. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing:

- a. ☐ forming part of the international application as filed:
☐ in the form of an Annex C/ST.25 text file.
☐ on paper or in the form of an image file.
- b. ☐ furnished together with the international application under PCT Rule 13*ter*. I(a) for the purposes of international search only in the form of an Annex C/ST.25 text file.
- c. ☐ furnished subsequent to the international filing date for the purposes of international search only:
☐ in the form of an Annex C/ST.25 text file (Rule 13*ter*. I(a)).
☐ on paper or in the form of an image file (Rule 13*ter*. I(b) and Administrative Instructions, Section 713).

4. ☐ In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that forming part of the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

5. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US2018/067818

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-18	YES
	Claims	NONE	NO
Inventive step (IS)	Claims	5-11	YES
	Claims	1-4,12-18	NO
Industrial applicability (IA)	Claims	1-18	YES
	Claims	NONE	NO

2. Citations and explanations :

Reference is made to the following documents:

D1: EP 1708602 B1 (KIMBERLY-CLARK WORLDWIDE, INC.) 13 June 2012

D2: KR 10-0765153 B1 (COZYNCO) 15 October 2007

D3: US 2017-0131174 A1 (BELKIN INTERNATIONAL, INC.) 11 May 2017

D4: US 5217035 A (VAN MARCKE, KAREL C.) 08 June 1993

D5: US 4914758 A (SHAW, DANIEL C.) 10 April 1990

D6: US 2013-0186196 A1 (MASCO CORPORATION OF INDIANA) 25 July 2013

I . Novelty and Inventive Step

1. Claim 1

D1, which is considered to be the closest prior art to the subject matter of claim 1, discloses a system comprising: a plurality of dispensers (1060, 1088) each configured to be located in a washroom, dispense a towel, a tissue or a soap through an activation cycle and have a dispenser sensor unit (DSU, 1014), wherein the dispenser sensor unit (DSU, 1014) is associated with a flow sensor (1130) of a sink or a toilet; the flow sensor (1130) configured to measure a flow of water; and a data communications unit (DCU, 1038) (see paragraphs [0102], [0144]-[0145], [0150] and figure 31).

Claim 1 differs from D1 in that a data processing apparatus is 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

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on the first and second times. However, this feature would be easily conceived from the disclosure of D1 considering that the data communications unit (DCU, 1038) is configured to communicate with the DSU (1014), the flow sensor (1130) and a washroom monitoring station (1040) configured for indicating the flow of water from the sink or the toilet when detected by the flow sensor (1130) (see paragraphs [0144]-[0145] and figure 31).

Accordingly, claim 1 would have been obvious over D1. Therefore, claim 1 does not involve an inventive step under PCT Article 33(3).

2. Claims 2-11

2.1 Claims 2-4

D1, which is considered to be the closest prior art to the subject matter of claim 2, discloses a system comprising: a plurality of dispensers (1060, 1088) each configured to be located in a washroom, dispense a towel, a tissue or a soap through an activation cycle and have a dispenser sensor unit (DSU, 1014), wherein the dispenser sensor unit (DSU, 1014) is associated with a flow sensor (1130) of a sink or a toilet; the flow sensor (1130) configured to measure a flow of water; and a data communications unit (DCU, 1038) (see paragraphs [0102], [0144]-[0145], [0150] and figure 31).

Claim 2 differs from D1 in that a data processing apparatus is 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. However, this feature would be easily conceived from the disclosure of D1 considering that the data communications unit (DCU, 1038) is configured to communicate with the DSU (1014), the flow sensor (1130) and a washroom monitoring station (1040) configured for indicating the flow of water from the sink or the toilet when detected by the flow sensor (1130) (see paragraphs [0144]-[0145] and figure 31).

The additional feature of claim 3 is identical to the feature of D1 in that the plurality of dispensers comprise a towel dispenser (1060), a tissue dispenser (1060) and a soap dispenser (1088) (see paragraph [0150] and figure 31).

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The additional feature of claim 4 is identical to a sink, a toilet and a urinal of D1 (see paragraph [0142]).

Accordingly, claims 2-4 would have been obvious over D1. Therefore, claims 2-4 do not involve an inventive step under PCT Article 33(3).

2.2 Claims 5-11

The additional feature of claim 5 is characterized in that 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. This feature is not disclosed in any of the documents D1-D5, nor is it obvious to a person skilled in the art by the documents.

Claims 6-11 are directly or indirectly dependent on claim 5.

Therefore, claims 5-11 meet the requirements of PCT Article 33(2) and (3) with respect to novelty and inventive step.

3. Claims 12-18

3.1 Claims 12, 14, 15

D1, which is considered to be the closest prior art to the subject matter of claim 12, discloses a method comprising the steps of: determining a flow of water from a sink or a toilet; and monitoring activation cycles from a plurality of dispensers (1060, 1088) having dispenser sensor units (DSU, 1014), wherein the dispenser sensor unit (DSU, 1014) is associated with a flow sensor (1130) of a sink or a toilet (see paragraphs [0102], [0144], [0150] and figure 31).

Claim 12 differs from D1 in that a method further comprises the steps of: in response to determining the water flow, determining which of the plurality of dispensers had a dispense cycle within a specific time range of the water flow; and monitoring the water flow to determine a water flow fault of the water source device associated with the dispenser having the dispense cycle. However, this feature would be easily conceived from the steps of:

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monitoring the activation cycles from the dispensers (1060, 1088); monitoring the flow of water from the sink or the toilet; and indicating the flow of water when detected by the flow sensor (1130) in D1 (see paragraphs [0144]-[0145] and figure 31).

The additional feature of claim 14 is identical to the feature of D1 in that the plurality of dispensers comprise a towel dispenser (1060), a tissue dispenser (1060) and a soap dispenser (1088) (see paragraph [0150] and figure 31).

The additional feature of claim 15 is identical to a sink, a toilet and a urinal of D1 (see paragraph [0142]).

Accordingly, claims 12, 14-15 would have been obvious over D1. Therefore, claims 12, 14-15 do not involve an inventive step under PCT Article 33(3).

3.2 Claims 13, 16-18

The additional feature of claim 13 is identical to a water leak of a faucet or a toilet (7) in D2 (see paragraph [0036]).

The additional features of claims 16-18 would be easily conceived from a flow rate of water being checked in real time in D2 (see paragraph [0035] and figure 2).

Accordingly, claims 13, 16-18 would have been obvious over D1 in view of D2. Therefore, claims 13, 16-18 do not involve an inventive step under PCT Article 33(3).

(*Note: With respect to 1. Novelty and Inventive step, it seems that claims 1, 2, 12 would have been obvious over D3.)

II . Industrial Applicability

Claims 1-18 are industrially applicable under PCT Article 33(4).