

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

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PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Date of mailing (day/month/year)	19/03/2020
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Applicant's or agent's file reference 64966941PCT02
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FOR FURTHER ACTION See paragraph 2 below
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International application No. PCT/US2019/063894	International filing date (day/month/year) 30/11/2019	Priority date (day/month/year) 30/11/2018
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International Patent Classification (IPC) A47K 10/32 (2006.01) A47K 5/06 (2006.01)
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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 43*bis*.1 (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 Examination 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 66.1*bis*(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/SG Intellectual Property Office of Singapore 1 Paya Lebar Link, #11-03 PLQ 1, Paya Lebar Quarter Singapore 408533 Email: pct@ipos.gov.sg	Date of completion of this opinion 18/03/2020 (day/month/year)	Authorized officer <u>Lee Yi Chau</u> IPOS Customer Service Tel. No.: (+65) 6339 8616
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Box No. I 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 purpose 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*.1(b)).
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*.1(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*.1(a)).
 - ☐ on paper or in the form of an image file (Rule 13*ter*.1(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 in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
5. Additional comments:

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

1. Statement

Novelty (N)	Claims	1-19	YES
	Claims	NONE	NO
Inventive step (IS)	Claims	7-11	YES
	Claims	1-6, 12-19	NO
Industrial applicability (IA)	Claims	1-19	YES
	Claims	NONE	NO

2. Citations and explanations:

The following citations are referred to in this written opinion. Full bibliographic details are provided in the International Search Report:

- D1 – US 2016/0331192 A1
- D2 – US 2018/0049609 A1
- D3 – US 7044421 B1

1. Novelty

Claims 1-19 are novel and therefore comply with PCT Article 33(2). None of the cited prior art documents individually discloses all the features of any of these claims.

2. Inventive step

Claims 1-6, 12-19 do not involve an inventive step and therefore do not comply with PCT Article 33(3).

Claim 1

D1 is considered as the closest prior art to the subject matter of claim 1 and discloses (references within parentheses refer to D1):

A dispensing system (para [0035]; fig. 1, ref. 1) for dispensing consumable product (para [0002]: hygienic sheet material) comprising:

a dispenser (para [0035]; fig. 1, ref. 1) including:

a body (para [0036]: housing 2; fig. 1, ref. 2) comprising a front side and a back side, and a product holding area (para [0036]: compartment 4; fig. 1, ref. 4) defined by the front side and the back side, wherein the product holding area is configured to store the consumable product (para [0036]: roll of wiping paper; fig. 1, ref. 5) within the dispenser;

a dispensing mechanism operatively coupled to the consumable product through a consumable product holder in the product storage area, and wherein the dispensing mechanism is configured to facilitate a dispensing cycle to dispense a portion of the consumable product (para [0042]: dispensing motor with driving mechanism to feed paper 5 towards the opening 3; fig. 1, refs. 9, 10, 11, 12);

a first sensor configured to scan for the presence of a user (para [0037]: first sensor 6 is a capacitive sensor; fig. 1, ref. 6);

a dispenser event sensor configured to sense an operational status of the dispenser (para [0037]: second sensor 7 for sensing that a piece of product 5 has been torn off or removed; fig. 1, ref. 7); and

a data processing device (para [0042]: microcontroller 9; fig. 1, ref. 9) configured to switch the dispenser between an active mode and a passive mode based on the actuation state of the first sensor and the dispenser event sensor (para [0046] and [0047]).

The subject matter of claim 1 thus differs from D1 in that:

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- (1) the first sensor is an impact sensor configured to sense a first impact to the dispenser; and
(2) the data processing device configured to store impact data describing the first impact and operational status data describing the operational status and associate the first impact data and the operational status data.

D2 discloses a dispensing apparatus 100 that may include at least one sensor 110 and said sensor 110 may include any of a variety of sensors configured to activate apparatus 100 to cause at least one article of sheet material to be dispensed (para [0028] and [0029]; fig. 1, ref. 110). D2 further discloses sensor 110 may include a shock sensor configured to sense a user moving near apparatus 100, touching apparatus 100, tapping on apparatus 100 with an object or body part, after which apparatus 100 may dispense an article of a sheet material (para [0033]). It appears to be a matter of design option for the skilled person to replace the capacitive sensor 6 of D1 with a shock sensor disclosed in D2 as an alternative way to detect a user before the dispenser is activated, thus arriving at differentiating feature (1) without the exercise of inventive skill. With regard to differentiating feature (2), by replacing the capacitive sensor with a shock sensor, storing the impact data describing the first impact and operational status data describing the operational status and associating the first impact data and the operational status data appear to be common data processing functions that can be performed by a microcontroller and hence cannot render the subject matter of claim 1 inventive.

Therefore, claim 1 does not involve an inventive step in view of D1.

Claim 16

D2 is the closest prior art to the subject matter of claim 16 and discloses (references within parentheses refer to D2):

A method comprising detecting a first impact, by a first impact sensor, to a dispenser (para [0028], [0029], [0033]).

The subject matter of claim 16 thus differs from D2 in that the method in claim 16 further comprising:

- during a next dispense cycle of the dispenser subsequent the first impact, detecting a malfunction, by a dispenser event sensor; and in response to detecting the malfunction, sending a malfunction alert.

However, the aforementioned differentiating features appear to be routine error monitoring and reporting adopted by automated dispensers, see D3 (col. 9, lines 22-47: the system wakes up from the sleep mode when it receives an interrupt, the next process is the error monitor 156... if error is detected... the error status is indicated... by the LED transmitting error status data; figs. 15-17; col. 10, line 44 – col. 11, line 4: checking for low battery error, stall error, or overload error implicitly discloses the feature of detecting a malfunction by a dispenser event sensor; fig. 24). Incorporating the error monitoring and reporting function after detecting a first impact by a first impact sensor in D2 appears to a straightforward option that the skilled person would choose and thus cannot render the aforementioned differentiating features inventive.

Therefore, claim 16 does not involve an inventive step in view of D2.

Claims 2-6, 12-15, 17-19

The additional features defined in claims 2-6, 12-15, 17-19 do not involve an inventive step for the following reasons:

Claims 2-4: the various types of sensors appear to be design options for the skilled person;

Claims 5 and 6: see D1, para [0038]: actuation of the tear-bar arrangement 8 mechanically influences the second sensor 7 implicitly discloses sensor 7 as an impact sensor or an accelerometer that detects the movement or actuation of tear-bar arrangement 8;

Claims 12 and 15: see D1, para [0045]: "low level of paper" condition implicitly discloses a low product sensor;

Claims 13 and 14: D1 discloses switching the dispenser between an active mode and a passive based on the actuation state of the first sensor and the dispenser event sensor implicitly discloses the association of the two data is done within a specific time frame; associating the impact data and the operational status data with a next-in-time dispensing cycle appears to be a design choice for the skilled person;

Claim 17: disabling the dispenser in response to detecting a malfunction appears to be well-known practice in the art;

Claims 18 and 19: paper jam and low or high motor current draw appear to be common malfunctions targeted for

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detection by automated dispensers.

Claims 7-11

Claims 7-11 involve an inventive step and therefore comply with PCT Article 33(3).

The additional features defined in claims 7 and 10 are not obvious to a person skilled in the art from the cited documents, either taken alone or in any combination. Claims 7 and 10 therefore involve an inventive step.

Claims 8, 9 and 11 also involve an inventive step by virtue of their dependency on claims 7 and 10, respectively.

3. Industrial applicability

Claims 1-19 are industrially applicable and therefore comply with PCT Article 33(4).