

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 64964748PC03	FOR FURTHER ACTION		See Form PCT/IPEA/416
International application No. PCT/US15/48461	International filing date (day/month/year) 04 September 2015 (04.09.2015)	Priority date (day/month/year) 26 September 2014 (26.09.2014)	
International Patent Classification (IPC) or national classification and IPC IPC: A47L 13/256(2006.01),13/24(2006.01),13/10(2006.01),13/16(2006.01),13/20(2006.01) USPC: 15/228,147.2,231			
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 <u>4</u> 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 <u>6</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which have been amended and/or sheets containing rectifications authorized by this Authority, unless those sheets were superseded or cancelled, and any accompanying letters (see Rules 46.5, 66.8, 70.16, 91.2, and Section 607 of the Administrative Instructions).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 ☐ superseded sheets and any accompanying letters, where this Authority either considers that the superseding sheets contain an amendment that goes beyond the disclosure in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. ☐ (sent to the International Bureau only) 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: ☒ 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 17 March 2016 (17.03.2016)		Date of completion of this report 28 June 2016 (28.06.2016)	
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 /Randall Chin/ Telephone No. (571) 272-1700	

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International application No.

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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 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 1-13 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* 14 and 15 received by this Authority on 17 March 2016 (17.03.2016)
- ☒ the drawings:
 pages 1/7-7/7 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. 2
- ☐ 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 28 June 2016 (28.06.2016)
- ☐ 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."

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International application No.
PCT/US15/48461**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 <u>1-19</u>	YES
	Claims <u>NONE</u>	NO
Inventive Step (IS)	Claims <u>NONE</u>	YES
	Claims <u>1-19</u>	NO
Industrial Applicability (IA)	Claims <u>1-19</u>	YES
	Claims <u>NONE</u>	NO

2. Citations and Explanations (Rule 70.7)
Please See Continuation Sheet

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Supplemental Box

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

V. 2. Citations and Explanations:

Claims 1-19 lack an inventive step under PCT Article 33(3) as being obvious over Japan 2005-143616 (hereinafter Suruga Co Ltd) in view of U.S. Patent Application Publication US 2006/0230567 (hereinafter Harper et al.).

As for claim 1, Suruga Co Ltd discloses a cleaning implement comprising: a handle body (5) (see paragraph [0012] and figures 1-2); the handle body (5) provided to a subject (3) (see paragraph [0012] and figures 1-2); an attachment component (4) provided to the subject's (3) upper section, wherein the attachment component (4) consists of a receiving hole part (7), and lock bodies (9a-9b) are made to form in a base substance (8) provided so that the receiving hole part (7) might be covered (see paragraphs [0006]-[0018] and figures 3-7(b)); slits (10)(11) formed on both ends of the lock bodies (9a-9b), wherein the lock bodies (9a-9b) are disposed adjacent to each other (see paragraphs [0016]-[0017] and figures 3-7(b)); and a curved deformation of the second lock body (9b) which can be carried out ahead of the first lock body (9a) by providing a reinforcing rib (12) to the first lock body (9a) (see paragraph [0025] and figure 7(b)). As for a plurality of buttresses extending within a cavity between a gripper face and a sidewall, it is virtually suggested and obvious considering providing the reinforcing rib (12) to the first lock body (9a) (see paragraph [0025] and figure 7(b)) in Suruga Co Ltd. As for the gripper face of the sheet gripping mechanism being formed from a polymeric material having a Shore A hardness ranging from 20 to 90, such is virtually suggested in Harper et al. considering the material of the cleaning implement or whole lower piece or portion thereof 120 having a durometer of preferably between about 20 and about 35, more preferably between about 25 and about 30 Shore A (See paragraphs [0041]-[0045] and figures 3-5) and one skilled in the art could find it obvious to use similar material for the gripper face as well to select an optimal hardness as recited for desired flexibility or rigidity and function.

As for claim 2, the additional feature of the polymeric material having a Shore A hardness ranging from greater than 60 to 90 is virtually suggested in Harper et al. considering the material can have a durometer of preferably between about 20 and about 35, more preferably between about 25 and about 30 Shore A (See paragraphs [0041]-[0045] and figures 3-5) and one skilled in the art could find it obvious to use similar material for the gripper face as well to select an optimal hardness as recited for desired flexibility or rigidity and function.

As for claim 3, the additional feature of the Shore A hardness ranging from 75-85 is virtually suggested in Harper et al.

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Supplemental Box

considering the material can have a durometer of preferably between about 20 and about 35, more preferably between about 25 and about 30 Shore A (See paragraphs [0041]-[0045] and figures 3-5) and one skilled in the art could find it obvious to use similar material for the gripper face as well to select an optimal hardness as recited for desired flexibility or rigidity and function.

As for claim 4 reciting that the polymeric material has a Gurley stiffness of less than about 11,000 mgf, such feature is deemed merely a matter of design option when general knowledge in the relevant field of the art is used for desired flexibility or rigidity and function.

As for claim 5 reciting that the Gurley stiffness ranges from 8000 mgf to 10,500 mgf, such feature is deemed merely a matter of design option when general knowledge in the relevant field of the art is used for desired flexibility or rigidity and function.

As for claim 6 reciting that the sheet gripping mechanism has a Penetration Index ranging from 1600 gf to 2400 gf, such feature is deemed merely a matter of design option when general knowledge in the relevant field of the art is used for desired flexibility or rigidity and function.

As for claim 7 reciting the plurality of buttresses apply a reactive force against the gripper face when at least a portion of the gripper face is moved downwardly within the cavity upon application of the downwardly directed force, such is virtually suggested in Suruga Co Ltd, considering that the reinforcing rib (12) changes strength and elastic force of the first lock body (9a) and the second lock body (9b) (see paragraph [0025] and figure 7(b)).

As for claim 8 reciting each buttress includes a pair of opposed sidewalls extending outwardly from the sidewall and the gripper face and a connecting wall extending between the opposed sidewalls, such is virtually suggested by Suruga Co Ltd, considering providing the reinforcing rib (12) to the first lock body (9a) (see paragraph [0025] and figure 7(b) in Suruga Co Ltd) and also is merely a matter of design option when general knowledge in the relevant field of the art is used.

As for claim 9 reciting that the connecting wall comprises an angled portion that terminates at the gripper face at a location at or adjacent to the slit, such is virtually suggested by Suruga Co Ltd, considering providing the reinforcing rib (12) to the first lock body (9a) (see paragraph [0025] and figure 7(b) in Suruga Co Ltd) and also is merely a matter of design option when general knowledge in the relevant field of the art is used.

As for claim 10, the slit (11) divides the gripper face into a first portion (9a) and a second portion (9b), wherein the plurality of buttresses extend within the cavity between the sidewall and at least one of the first portion or the second portion of the gripper face, such is virtually suggested by the feature of Suruga Co Ltd, (See paragraphs [0016], [0025] and figures 5, 7(b) in Suruga Co Ltd) also is merely a matter of design option when general knowledge in the relevant field of the art is used.

As for claim 11, the slit (11) extends lengthwise between a first end and a second end and defines a length between the first and second ends, the plurality of buttresses extending between the gripper face and the sidewall at locations contained within a central portion of the slit, such is virtually suggested by the feature of Suruga Co Ltd, (See paragraphs [0016], [0025] and figures 5, 7(b) in Suruga Co Ltd) also is merely a matter of design option when general knowledge in the relevant field of the art is used.

As for claim 12 reciting that the central portion corresponds to a section of the slit spaced apart from the first end or the second end by a distance ranging from 25% to 75% of the length, the additional feature is merely a matter of design option when general knowledge in the relevant field of the art is used.

As for claim 13, the cleaning head defines a socket, the sheet gripping mechanism being received within the socket since Harper et al. teaches an upper leading region (220B) includes openings (1220) for allowing attachment structures (320) (see paragraph [0078] and figures 5-6B).

As for claim 14, Suruga Co Ltd discloses a cleaning implement comprising: a handle body (5) (see paragraph [0012] and figures 1-2); the handle body (5) provided to a subject (3) (see paragraph [0012] and figures 1-2); an attachment component (4) provided to the subject's (3) upper section, wherein the attachment component (4) consists of a receiving hole part (7), and lock bodies (9a-9b) are made to form in a base substance (8) provided so that the receiving hole part (7) might be covered (see paragraphs [0006]-[0018] and figures 3-7(b)); slits (10)(11) formed on both ends of the lock bodies (9a-9b), wherein the lock bodies (9a-9b) are disposed adjacent to each other (see paragraphs [0016]-[0017] and figures 3-7(b)); and a curved deformation of the second lock body (9b) which can be carried out ahead of the first lock body (9a) by providing a reinforcing rib (12) to the first lock body (9a) (see paragraph [0025] and figure 7(b)). As for the gripper face of the sheet gripping mechanism being formed from a polymeric material having a Shore A hardness ranging from 60 to 90, such is virtually suggested in Harper et al. considering the material of the cleaning implement or whole lower piece or portion thereof 120 having a durometer of preferably between about 20 and about 35, more preferably between about 25 and about 30 Shore A (See paragraphs [0041]-[0045] and figures 3-5) and one skilled in the art could find it obvious to use similar material for the gripper face as well to select an optimal hardness as recited for desired flexibility or rigidity and function.

As for claim 15 reciting the polymeric material comprises a thermoplastic elastomer, such is virtually suggested by Harper et al. considering that a lower piece (120) can be thermo-formed via a process (see paragraph [0085] and figures 3-6B) and it is merely a matter of design option when general knowledge in the relevant field of the art is used

As for claim 16, the additional feature of the Shore A hardness ranging from 75-85 is virtually suggested in Harper et al. considering the material can have a durometer of preferably between about 20 and about 35, more preferably between about 25 and about 30 Shore A (See paragraphs [0041]-[0045] and figures 3-5) and one skilled in the art could find it obvious to use similar material for the gripper face as well to select an optimal hardness as recited for desired flexibility or rigidity and function.

As for claim 17 reciting that the polymeric material has a Gurley stiffness of less than about 11,000 mgf, such feature is deemed merely a matter of design option when general knowledge in the relevant field of the art is used for desired flexibility or rigidity and function.

As for claim 18 reciting that the Gurley stiffness ranges from 8000 mgf to 10,500 mgf, such feature is deemed merely a matter of design option when general knowledge in the relevant field of the art is used for desired flexibility or rigidity and function.

As for claim 19 reciting that the sheet gripping mechanism has a Penetration Index ranging from 1600 gf to 2400 gf, such feature is deemed merely a matter of design option when general knowledge in the relevant field of the art is used for desired flexibility or

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rigidity and function.

Claims 1-19 meet the criteria set out in PCT Article 33(4), and thus meet industrial applicability because the subject matter claimed can be made or used in industry.

Int'l Appl. No.: PCT/US2015/048461

WHAT IS CLAIMED IS:

1. A cleaning implement comprising:
a handle;
a cleaning head coupled to the handle; and
a sheet gripping mechanism at least partially received within a portion of the cleaning head, the sheet gripping mechanism including a gripper face and a sidewall extending outwardly from the gripper face, the sidewall and the gripper face at least partially defining a cavity extending within the sheet gripping mechanism,
wherein a slit is defined through the gripper face so that portions of the gripper face are separately moveable with respect to one another upon application of a force directed downwardly into the cavity,
wherein the sheet gripping mechanism further comprises a plurality of buttresses extending within the cavity between the gripper face and the sidewall,
wherein the gripper face of the sheet gripping mechanism is formed from a polymeric material having a Shore A hardness ranging from 20 to 90.
2. The cleaning implement of claim 1, wherein the polymeric material has a Shore A hardness ranging from greater than 60 to 90.
3. The cleaning implement of claim 2, wherein the Shore A hardness ranges from 75 to 85.
4. The cleaning implement of claim 1, wherein the polymeric material has a Gurley stiffness of less than 11,000 mgf.
5. The cleaning implement of claim 4, wherein Gurley stiffness ranges from 8000 mgf to 10,500 mgf.
6. The cleaning implement of claim 1, wherein the sheet gripping mechanism has a Penetration Index ranging from 1600 gf to 2400 gf.
7. The cleaning implement of claim 1, wherein the plurality of buttresses apply a reactive force against the gripper face when at least a portion of the gripper face is moved downwardly within the cavity upon application of the downwardly directed force.
8. The cleaning implement of claim 1, wherein each buttress includes a pair of opposed sidewalls extending outwardly from the sidewall and the gripper face and a connecting wall extending between the opposed sidewalls.
9. The cleaning implement of claim 8, wherein the connecting wall comprises an angled portion that terminates at the gripper face at a location at or adjacent to the slit.

Int'l Appln. No.: PCT/US2015/048461

10. The cleaning implement of claim 1, wherein the slit divides the gripper face into a first portion and a second portion, wherein the plurality of buttresses extend within the cavity between the sidewall and at least one of the first portion or the second portion of the gripper face.

11. The cleaning implement of claim 1, wherein the slit extends lengthwise between a first end and a second end and defines a length between the first and second ends, the plurality of buttresses extending between the gripper face and the sidewall at locations contained within a central portion of the slit.

12. The cleaning implement of claim 11, wherein the central portion corresponds to a section of the slit spaced apart from the first end or the second end by a distance ranging from 25% to 75% of the length.

13. The cleaning implement of claim 1, wherein the cleaning head defines a socket, the sheet gripping mechanism being received within the socket.

14. A cleaning implement comprising:

a handle;

a cleaning head coupled to the handle; and

a sheet gripping mechanism at least partially received within a portion of the cleaning head, the sheet gripping mechanism including a gripper face and a sidewall extending outwardly from the gripper face, the sidewall and the gripper face at least partially defining a cavity extending within the sheet gripping mechanism,

wherein a slit is defined through the gripper face so that portions of the gripper face are separately moveable with respect to one another upon application of a force directed downwardly into the cavity,

wherein the gripper face is formed from a polymeric material having a Shore A hardness ranging from greater than 60 to 90.

15. The cleaning implement of claim 14, wherein the polymeric material comprises a thermoplastic elastomer.

16. The cleaning implement of claim 14, wherein the Shore A hardness ranges from 75 to 85.

17. The cleaning implement of claim 14, wherein the polymeric material has a Gurley stiffness of less than 11,000 mgf.

18. The cleaning implement of claim 14, wherein Gurley stiffness ranges from 8000 mgf to 10,500 mgf.

19. The cleaning implement of claim 14, wherein the sheet gripping mechanism has a Penetration Index ranging from 1600 gf to 2400 gf.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Kimberly-Clark Worldwide, Inc.
Int'l. Appln. No.: PCT/US2015/048461
Int'l. Filing Date: September 4, 2015
Title: Cleaning Implement with Improved Sheet Gripping Mechanisms
Docket No.: 64964748PC03 (KCX-1892-PCT)
Date: March 17, 2016

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 and dated December 15, 2015, Applicant respectfully requests that the following amendments be entered and remarks be considered with respect to the above-referenced application pursuant to PCT Article 34.

Amendments to the Claims:

Original claims 8, 9, 11, 12, and 14 are unchanged while original claims 1, 3-7, 10, 13, and 15-20 have been amended. Original claim 2 has been cancelled.

Applicant respectfully requests that the pending claims of the application be replaced with the clean set of enclosed claims. No new matter has been added in the replacement claims.

Basis for the Amendments:

Original claim 1 has been amended to require that the gripper face of the sheet gripping mechanism is formed from a polymeric material having a Shore A hardness ranging from 20 to 90. Support for such amendments can be found at lines 3-20 on page 12 of the present application.

Original claim 3 has been amended to require that the polymeric material has a Shore A hardness ranging

from greater than 60 to 90. Support for such amendments can be found at lines 15-20 on page 12 of the present application.

Original claim 4 has been amended to require that the polymeric material has a Shore A hardness ranging from 75 to 85. Support for such amendments can be found at lines 15-20 on page 12 of the present application.

Original claim 15 has been amended to require that the polymeric material has a Shore A hardness ranging from greater than 60 to 90. Support for such amendments can be found at lines 15-20 on page 12 of the present application.

Original claim 17 has been amended to require that the polymeric material has a Shore A hardness ranging from 75 to 85. Support for such amendments can be found at lines 15-20 on page 12 of the present application.

Original claims 5, 6, 7, 13, and 18-20 have been amended to remove the term "about."

Original claims 3-6, 10, 13, and 16-20 have also been amended to ensure proper claim dependencies.

Remarks:

The following remarks are made in response to the comments set forth in the Written Opinion of the International Searching Authority.

Novelty

Applicant acknowledges the indication that original claims 1-20 are novel.

Inventive Step

Original claims 1-14, including original independent claim 1, allegedly lack inventive step over D1 (JP 2005-143616 to Suruga Co. Ltd.). Original claims 15-20, including original independent claim 15, allegedly lack inventive step over D1 and D2 (US 2006-0230567 to Harper et al.).

Independent claim 1, as amended herein, requires that the gripper face of the sheet gripping mechanism is formed from a polymeric material having a Shore A hardness ranging from 20 to 90. D1 is completely

silent as to the specific material properties of its holding member 4. As such, D1 fails to disclose a gripper face of a sheet gripping mechanism that is formed from a polymeric material having a Shore A hardness ranging from 20 to 90.

Additionally, it is submitted that D2 fails to cure the deficiencies of D1. In the Written Opinion, it is asserted that paragraphs [0041]-[0045] disclose the use of a material having a Shore A hardness "preferably between about 20 and about 35, more preferably between about 25 and about 30." However, the cited paragraphs relate solely to the material properties for the lower piece 220 of the support head 20 of the cleaning implement 10 disclosed by D2 and, thus, are not related to Shore A hardness values for a gripper face of a sheet gripping mechanism that is received within a portion of a cleaning head of a cleaning implement (as required by independent claim 1). D2 does describe that its cleaning implement 10 includes attachment structures 320 for retaining a cleaning substrate that are separately coupled to the support head 20. (para. [0078] and FIG. 5). However, D2 fails to disclose any information regarding the material properties of the attachment structures 320. As such, D2 fails to cure the deficiencies of D1.

Independent claim 14 (original claim 15), as amended herein, requires that the gripper face of the sheet gripping mechanism is formed from a polymeric material having a Shore A hardness ranging from greater than 60 to 90. For at least the reasons described above with reference to independent claim 1, it is submitted that claim 14 exhibits an inventive step over D1 and D2. Specifically, as indicated above, both D1 and D2 are completely silent as to the specific material properties of their respective holding members 4 and attachment structures 320. For example, D2 simply describes Shore A hardness value ranges for the lower piece 220 of the support head 20 of its cleaning implement 10. Moreover, even considering the hardness value ranges disclosed in D2, the reference completely fails to disclose the use of a material having a Shore A hardness ranging from greater than 60 to 90.

In view of the foregoing, Applicant respectfully submits that pending claims 1-19 exhibit an inventive step over D1 and D2.

Industrial Applicability

Applicant acknowledges the indication that original claims 1-20 possess industrial applicability.

Conclusion:

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

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,
DORITY & MANNING, P.A.

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Enclosure: 2 Pages of Replacement Claims