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- (71) Applicant: 3M INNOVATIVE PROPERTIES COMPANY [US/US]; 3M Center, Post Office Box 33427, Saint Paul, Minnesota 55133-3427 (US).
- (72) Inventor: ZENG, Feng; 8 Xing Yi Road, Maxdo Centre 38/F, Shanghai 200336 (CN).
- (74) Agents: ADAMSON, Trisha D. et al.; 3M Center Office of Intellectual Property Counsel Post Office Box 33427, Saint Paul, Minnesota 55133-3427 (US).

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(54) Title: MOP HEAD

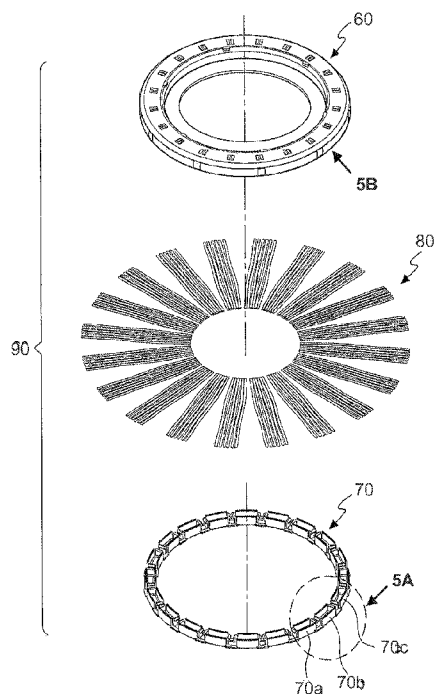


FIG. 3

(57) Abstract: The disclosed mop head comprises a plurality of cleaning cloth strips independent of each other, a base body having a plurality of cleaning strip uniting placements, and a plurality of separated jointers, each carrying the respective one of the plurality of cleaning cloth strips. The plurality of cleaning cloth strips are detachably and respectively united in the plurality of cleaning cloth strip uniting placements by the plurality of jointers. The disclosed mop head is simple to manufacture and assemble with reliable connections between a base body and cleaning cloth strips are achieved. The cleaning cloth strips may be refillable or replaceable individually.



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MOP HEAD**FIELD**

5 The present disclosure generally relates to household cleaning articles, and in particular, to a refill mop head onto which cleaning cloth strips that are refillable and replaceable individually and conveniently are mounted.

BACKGROUND

10 Mops are usually household cleaning articles in daily life. One of the important components of the mop is the mop head that is used to connect the cleaning cloth strips of the mop to the mop handle.

 Figs. 1 and 2 exemplarily show a common round plate refill mop head matchable to a spin mop bucket. This round plate refill mop head includes a round plate frame 10 and cleaning cloth strips 30. The cleaning cloth strips 30 are secured in the round plate frame 10 in a manner that they are directly embedded in these punch holes. Specifically, each punch hole has a portion with relative larger size and a portion with relative smaller size. The cleaning cloth strip is secured to the round plate frame 10 by doubling back the cleaning cloth strip, passing it from the portion with relative larger size and the portion with relative smaller size, and then, drawing it back. However, special equipment is necessary for manufacture of such mop head, which results in high cost. In addition, in such mop head, there are no stable connections between these cleaning cloth strips and the round plate frame.

 US patent 8,220,104 discloses another round plate refill mop head. As shown in Fig. 3, this round plate refill mop head 90 includes a round plate base 60 having a plurality of bores formed at edge thereof, a round pressing member 70 suitable for engagement with the round plate base 60, and these cleaning cloth strips 80. The cleaning cloth strips 80 are sandwiched between the round pressing member 70 and the round plate base 60. However, this kind of mop head requires that several pairs of mechanical mechanisms mated with each other are formed in the round pressing member 70 and the round plate base 60, respectively. This round plate refill mop head may be successfully assembled only when each of the round plate base 60, the round pressing member 70, and these cleaning cloth strips 80 is positioned in an accurate position relative to the other two. It is laborious and troublesome.

 Therefore, it is desirable to develop a mop head which has simple manufacture and assembly process, and reliable connections, and of which cleaning cloth strips are refillable or replaceable individually.

SUMMARY

40 The disclosed mop head is simple to manufacture and assemble with reliable connections between a base body and cleaning cloth strips are achieved. The cleaning cloth strips may be refillable

or replaceable individually. In one embodiment, the mop head comprises:

a plurality of cleaning cloth strips independent of each other;

a base body having a plurality of cleaning cloth strip uniting placements; and

a plurality of separated jointers, each carrying the respective one of the plurality of cleaning
5 cloth strips;

wherein the plurality of cleaning cloth strips are detachably and respectively united in the plurality of cleaning cloth strip uniting placements by the plurality of jointers.

In one embodiment, the plurality of cleaning cloth strip uniting placements comprises a plurality of openings formed on a bottom surface of the base body; wherein each of the plurality of
10 jointers, carried with the respective cleaning cloth strip, is removably inserted in each of the openings. Preferably, each of the openings is embodied as a through opening extended from the bottom surface up to a top surface of the base body. Alternatively, each of the openings is embodied as an opening extended from the bottom surface but not up to a top surface of the base body. In one embodiment, each
15 of the openings is embodied as an opening has a substantially tapering or a trumpet shape that has a gradually reducing radial dimension from the bottom surface to a top surface of the base body.

In one embodiment, at least one portion of each of the plurality of jointers is elastically deformable. In one embodiment, each of the plurality of jointers is configured such that radial dimension of the jointer in a nature state is greater than that of at least one radial cross section of the opening while radial dimension of the jointer in an elastically deformed state equals to or is less
20 than that of the at least one radial cross section of the opening. In one embodiment, each of the plurality of jointers comprises a cleaning cloth strip carrying portion; and an elastically deformable portion extended from the cleaning cloth strip carrying portion; wherein each of the plurality of jointers is configured such that radial dimension of at least the elastically deformable portion in a nature state is greater than that of at least one radial cross section of the opening while radial dimension of the
25 jointer in an elastically deformed state equals to or is less than that of the at least one radial cross section of the opening. In one embodiment, each of the plurality of jointers further comprises an engagement portion extended from the elastically deformable portion; and an engagement region is formed at and/or adjacent to each opening and is for being engaged with the engagement portion of the jointer.

In one embodiment, each of the plurality of jointers has a substantially U-shaped configuration, wherein in each of the plurality of jointers, the cleaning cloth strip carrying portion comprises a lower half part of the U-shaped configuration and the elastically deformable portion comprises a pair of elastic arms extended from the cleaning cloth strip carrying portion. In one embodiment, the engagement portion comprises a pair of barbs each extended from the respective one of the pair of
35 elastic arms. Alternatively, the engagement portion comprises a pair of bosses each extended from the respective one of the pair of elastic arms. In one embodiment, each of the plurality of jointers is formed integrally.

In one embodiment, the base body is embodied as a round plate shape base body where the

plurality of cleaning cloth strip uniting placements are formed uniformly and at equal intervals.

In one embodiment, each of the plurality of cleaning cloth strips has elastic behavior and is hanged on each of the plurality of jointers. Alternatively, each of the plurality of cleaning cloth strips may comprise one or more cleaning cloth piece.

5 The disclosed mop head includes the plurality of cleaning cloth strips detachably and respectively united in the plurality of cleaning cloth strip uniting placements on the base body, by adopting the plurality of jointers. That is, the mop head not only has simple assemble process but also achieves secure connections between these jointers 60 and the base body 40, without utilizing special equipment. Further, in the mop head, because every cleaning cloth piece is detachably united
10 in the respective cleaning cloth strip uniting placement on the base body by means of one jointer, the cleaning cloth strips of the head mop may be refillable or replaceable individually, according to necessities (for example, when some cleaning cloth strips are wastage or loss).

Various other objects and achievable technical effects will become apparent through the following description of the preferred embodiments and the accompanying drawings attached hereto.

BRIEF DESCRIPTION OF THE DRAWINGS

These and/or other objects, features and advantages will become apparent and more readily appreciated from the following description of the preferred embodiments of the present utility model,
20 taken in conjunction with the accompanying drawings of which:

Figs. 1 and 2, which includes 2a, 2b, and 2c, are schematic views of a prior art mop head;

Fig. 3 is a schematic view of another prior art mop head;

Fig. 4 is a schematic view of a mop head according to one embodiment, showing the mop head
25 in a to be assembled state;

Fig. 5 is a schematic view of a mop head according to one embodiment, showing the mop head in an after assembled state;

Fig. 6 is a partially enlarged schematic view of one cleaning strip provided at a base body of a mop head according to one embodiment, showing one jointer carried with the cleaning cloth strip, being
30 ready to be united into one cleaning cloth strip uniting placement of the base body; and

Fig. 7 is a partially enlarged schematic view of one cleaning strip provided in a base body of a mop head according to one embodiment, showing one jointer carried with the cleaning cloth strip, have already been united in one cleaning cloth strip uniting placement of the base body.

The scope of the invention will in no way be limited to the simply schematic views of the
35 drawings, the number of constituting components, the materials thereof, the shapes thereof, the relative arrangement thereof, etc., and are disclosed simply as an example of an embodiment.

DETAILED DESCRIPTION

40 Exemplary embodiments of the present disclosure will be described hereinafter in detail with

reference to the attached drawings, wherein the like reference numerals refer to the like elements. The present disclosure may, however, be embodied in many different forms and should not be construed as being limited to the embodiment set forth herein; rather, these embodiments are provided so that the present disclosure will be thorough and complete, and will fully convey the concept of the disclosure to those skilled in the art.

Figs. 4-7 disclose a mop head 100 used for (e.g., floor) cleaning. The mop head 100 comprises: a plurality of cleaning cloth strips 50 independent of each other; a base body 40 having a plurality of cleaning cloth strip uniting placements (for example, these openings shown in Figs. 4-7); and a plurality of separated jointers 60, each carrying the respective one of the plurality of cleaning cloth strips 50. The plurality of cleaning cloth strips 50 are detachably and respectively united in the plurality of cleaning cloth strip uniting placements by the plurality of jointers 60.

The plurality of cleaning cloth strip uniting placements may comprise a plurality of openings 45 formed on a bottom surface 42 of the base body 40. Each of the plurality of jointers 60, carried with the respective cleaning cloth strip 50, is removably inserted in each of the openings 45 from the bottom surface 42 of the base body 40. According to the embodiment shown in Figs. 4-7, the plurality of cleaning cloth strip uniting placements on the base body 40 may be these through openings extended from the bottom surface 42 up to a top surface 41 of the base body 40.

Alternatively, according to another embodiment, the plurality of cleaning cloth strip uniting placements on the base body 40 may be these openings (e.g., blind holes) extended from the bottom surface 42 but not up to a top surface 41 of the base body 40. As shown in Figs. 6 and 7, each of the openings 45 may be an opening has a substantially tapering or a trumpet shape that has a gradually reducing radial dimension from the bottom surface 42 to a top surface 41 of the base body 40.

Each of the plurality of jointers 60, for carrying the plurality of cleaning cloth strips 50, is elastically deformable. Each of the plurality of jointers 60 is configured such that radial dimension of the jointer 60 in a nature state is greater than that of at least one radial cross section of the opening 45 while radial dimension of the jointer 60 in an elastically deformed state equals to or is less than that of the at least one radial cross section of the opening 45. In this way, each jointer 60 in an elastically deformed state may be inserted easily into each opening 45 of the base body 40, thereby the jointer 60, with its elastic behavior, already inserted in the opening 45 may be firmly united into the opening 45 of the base body 40. As a result, every jointer 60 which carries the cleaning cloth strip 50 and has been inserted in the respective opening 45 may be accommodated within the corresponding opening 45 of the base body 40.

Alternatively, in the mop head 100, referring to Figs. 6 and 7, each of the plurality of jointers 60 may comprise a cleaning cloth strip carrying portion 61 and an elastically deformable portion 62 extended from the cleaning cloth strip carrying portion 61. Each of the plurality of jointers 60 is configured such that entity radial dimension of at least the elastically deformable portion 62 in a nature state is greater than that of at least one radial cross section of the opening 45 while entity radial dimension of the jointer 60 in an elastically deformed state equals to or is less than

that of the at least one radial cross section of the opening 45. In this way, each of the plurality of jointers 60 may have its elastically deformable portion 62 to be accommodated within each opening 45 of the base body 40, and the cleaning cloth strip carrying portion 61, carried with the cleaning cloth strip 50, of the jointer 60 may be exposed to the corresponding opening 45 of the base body 40.

5 Preferably, referring to Figs. 6 and 7, in the mop head, each of the plurality of jointers 60 may further comprise an engagement portion 63 extended from the elastically deformable portion 62. Provision of this engagement portion 63 is used for uniting the cleaning cloth strip carrying portion 61 carried with the cleaning cloth strip 50 into the base body 40 in a more stable manner. Accordingly, an engagement region 43 is formed at every opening 45 of the base body 40 and is used for being
10 engaged with the engagement portion 63 of the jointer 60.

Taken as an example, in the embodiment shown in Figs. 4-7, each of the plurality of jointers 60 has a substantially U-shaped configuration. In particular, in each of the plurality of jointers 60, the cleaning cloth strip carrying portion 61 comprises a lower half part of the U-shaped configuration and the elastically deformable portion 62 comprises a pair of elastic arms extended from the cleaning
15 cloth strip carrying portion 61. In the embodiment where the jointer 60 has the engagement portion 63, the engagement portion 63 may be a pair of barbs each extended from the respective one of the pair of elastic arms. Alternatively, the engagement portion 63 may be a pair of bosses each extended from the respective one of the pair of elastic arms. In this case, each of the plurality of jointers 60 may carry each of the plurality of cleaning cloth strips 50 with elastic behavior by being hanged on the
20 lower half part of the U-shaped configuration. In the embodiment shown in Figs. 6 and 7, the engagement regions 43 may be a region formed at and/or adjacent to every opening 45 of the base body 40. However, in an alternative embodiment where the cleaning cloth strip uniting placements are not through openings, and sometimes, are the blind bores or similar configurations, the engagement regions 43 may be recessed regions formed within these non-penetrating opening 45 of the base body 40
25 (not shown).

In the mop head 100, the plurality of cleaning cloth strip uniting placements (e.g., the plurality of openings 45) may be formed uniformly and at equal intervals on the base body 40. According to necessity, the base body 40 may have a cross section of round plate shape, square shape, or rectangular shape. For example, as shown in Figs. 4 and 5, in the embodiment where the base
30 body 40 is a round plate shape one, the plurality of cleaning cloth strip uniting placements (e.g., the plurality of openings 45) are formed uniformly and at equal intervals on the round plate base body 40.

In the embodiment shown in Figs. 4-7, each of the plurality of cleaning cloth strips 50 may comprises one or more cleaning cloth piece 51. Preferably, these cleaning cloth strips 50 are made by, for example, material with good water and dust absorption performance. As shown in Fig. 7, once the
35 jointer 60, which carries the cleaning cloth strip 50 with elastic behavior in a hang manner, has been united into the cleaning cloth strip uniting placement (e.g., the opening 45) of the base body 40, the cleaning cloth strip 50 in the cleaning cloth strip uniting placement (e.g., the opening 45) may further secure itself in the opening 45 by its elastic behavior. This further ensures connections

between these jointers 60 and the base body 40.

In the mop head 100 according to the present utility model, as shown in the Figures, each of the plurality of jointers 60 is formed integrally. These jointers 60 are made of plastic materials.

Concerning the above, in the mop head, the plurality of cleaning cloth strips are detachably
5 and respectively united in the plurality of cleaning cloth strip uniting placements on the base body, by adopting the plurality of jointers. That is, the mop head not only has simple assemble process but also achieves secure connections between these jointers 60 and the base body 40, without utilizing special equipment. Further, in the mop head, because every cleaning cloth piece is detachably united in the respective cleaning cloth strip uniting placement on the base body by means of one jointer, the
10 cleaning cloth strips of the head mop may be refillable or replaceable individually, according to necessities (for example, when some cleaning cloth strips are wastage or loss).

Although several exemplary embodiments have been shown and described, it would be appreciated by those skilled in the art that any changes or modifications may be made in these embodiments without departing from the principles and spirit of the disclosure, the scope of which is
15 defined in the claims and their equivalents.

What is claimed is,

1. A mop head comprising:

a plurality of cleaning cloth strips (50) independent of each other;

5 a base body (40) having a plurality of cleaning cloth strip uniting placements;

and

a plurality of separated jointers (60), each carrying the respective one of said plurality of cleaning cloth strips;

wherein said plurality of cleaning cloth strips (50) are detachably and respectively united in said
10 plurality of cleaning cloth strip uniting placements by said plurality of jointers (60).

2. The mop head according to claim 1, wherein said plurality of cleaning cloth strip uniting placements comprises a plurality of openings (45) formed on a bottom surface (42) of the base body (40); wherein each of said plurality of jointers (60), carried with the respective cleaning cloth strip, is
15 removably inserted in each of said openings (45).

3. The mop head according to claim 2, wherein each of said openings (45) is embodied as a through opening extended from the bottom surface (42) up to a top surface (41) of the base body (40).

20 4. The mop head according to claim 2, wherein each of said openings (45) is embodied as an opening extended from the bottom surface (42) but not up to a top surface (41) of the base body (40).

25 5. The mop head according to claim 3 or 4, wherein each of said openings (45) is embodied as an opening has a substantially tapering or a trumpet shape that has a gradually reducing radial dimension from the bottom surface (42) to a top surface (41) of the base body (40).

6. The mop head according to claim 5, wherein at least one portion of each of said plurality of jointers (60) is elastically deformable.

30 7. The mop head according to claim 6, wherein each of said plurality of jointers (60) is configured such that radial dimension of the jointer (60) in a nature state is greater than that of at least one radial cross section of said opening (45) while radial dimension of the jointer (60) in an elastically deformed state equals to or is less than that of the at least one radial cross section of said
35 opening (45).

8. The mop head according to claim 7, wherein each of said plurality of jointers (60) comprises:

a cleaning cloth strip carrying portion (61); and
an elastically deformable portion (62) extended from said cleaning cloth strip carrying portion (61);

wherein each of said plurality of jointers (60) is configured such that radial dimension of at least the elastically deformable portion (62) in a nature state is greater than that of at least one radial cross section of said opening (45) while radial dimension of the jointer (60) in an elastically deformed state equals to or is less than that of the at least one radial cross section of said opening (45).

9. The mop head according to claim 8, wherein each of said plurality of jointers (60) further comprises an engagement portion (63) extended from said elastically deformable portion (62); and an engagement region (43) is formed at and/or adjacent to each opening (45) and is for being engaged with said engagement portion (63) of the jointer (60).

10. The mop head according to claim 9, wherein each of said plurality of jointers (60) has a substantially U-shaped configuration, wherein in each of said plurality of jointers (60), said cleaning cloth strip carrying portion (61) comprises a lower half part of said U-shaped configuration and said elastically deformable portion (62) comprises a pair of elastic arms extended from said cleaning cloth strip carrying portion (61).

11. The mop head according to claim 10, wherein said engagement portion (63) comprises a pair of barbs each extended from the respective one of said pair of elastic arms.

12. The mop head according to claim 10, wherein said engagement portion (63) comprises a pair of bosses each extended from the respective one of said pair of elastic arms.

13. The mop head according to claim 1, wherein each of said plurality of jointers (60) is formed integrally.

14. The mop head according to claim 1, wherein said base body (40) is embodied as a round plate shape base body where said plurality of cleaning cloth strip uniting placements are formed uniformly and at equal intervals.

15. The mop head according to claim 1, wherein each of said plurality of cleaning cloth strips (50) has elastic behavior and is hanged on each of said plurality of jointers (60).

16. The mop head according to claim 1, wherein each of said plurality of cleaning cloth strips (50) comprises one or more cleaning cloth piece (51).

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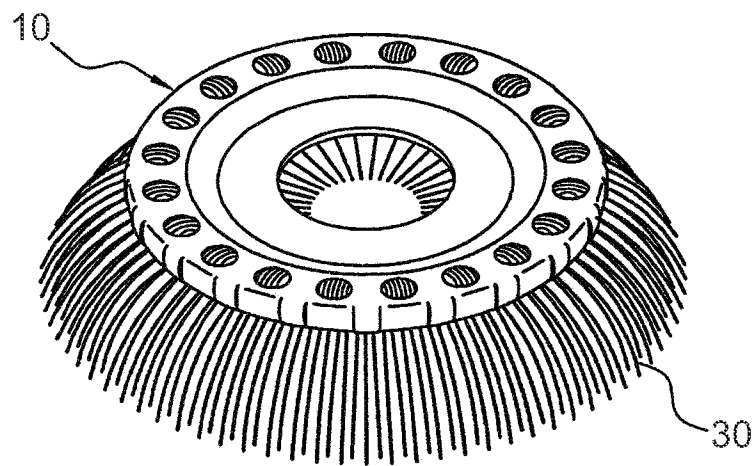


FIG. 1

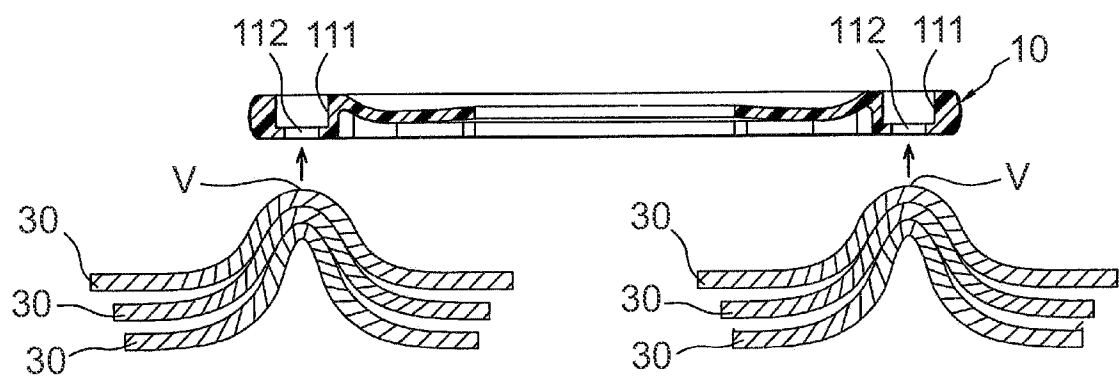


FIG. 2A

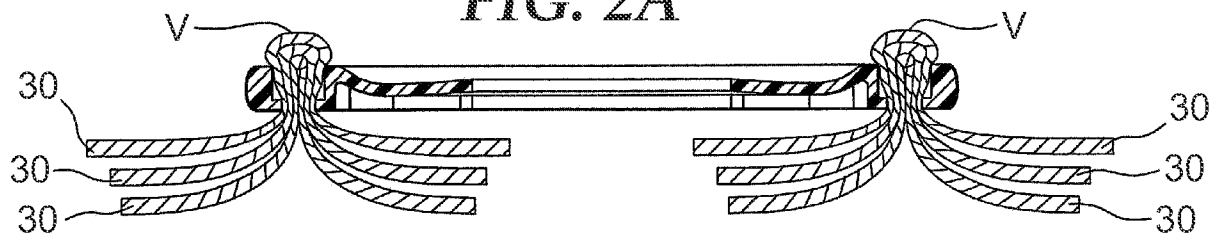


FIG. 2B

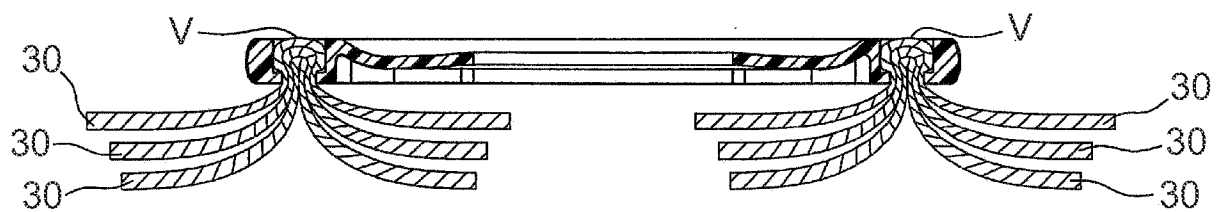


FIG. 2C

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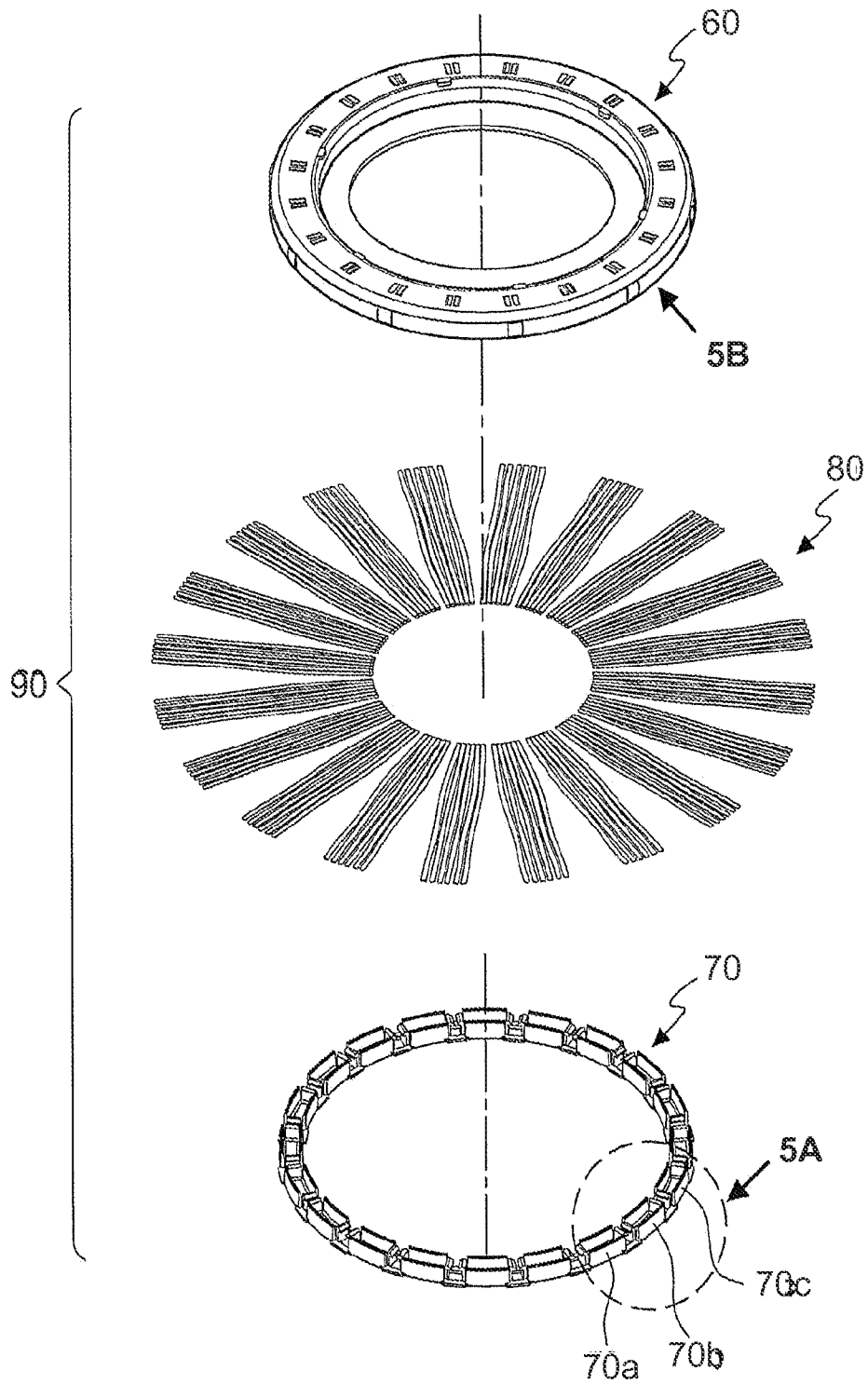
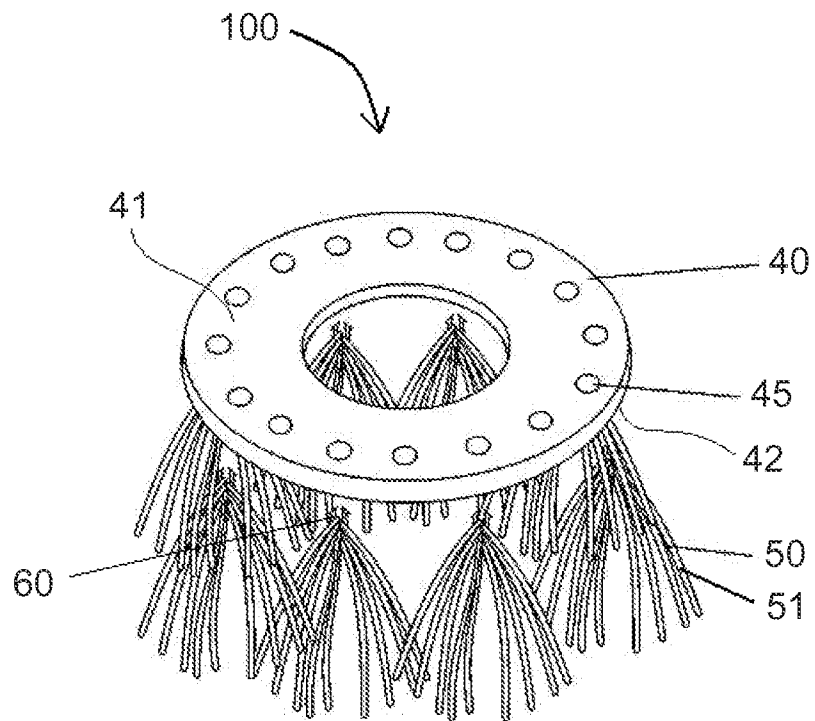
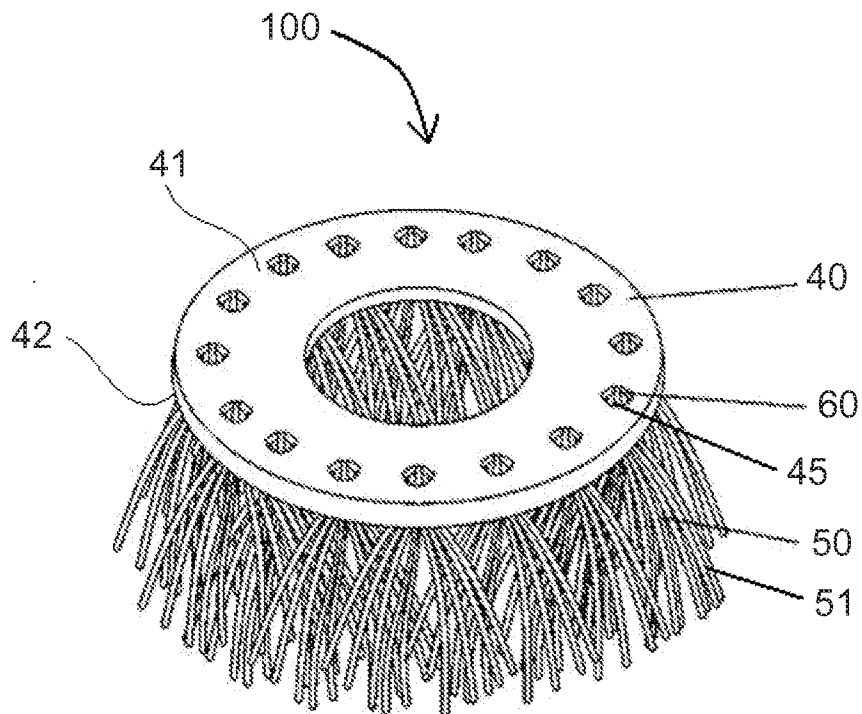
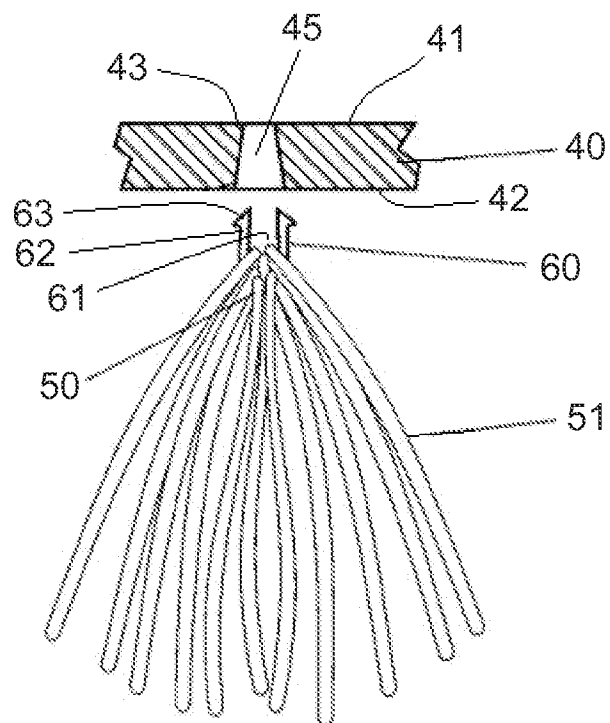
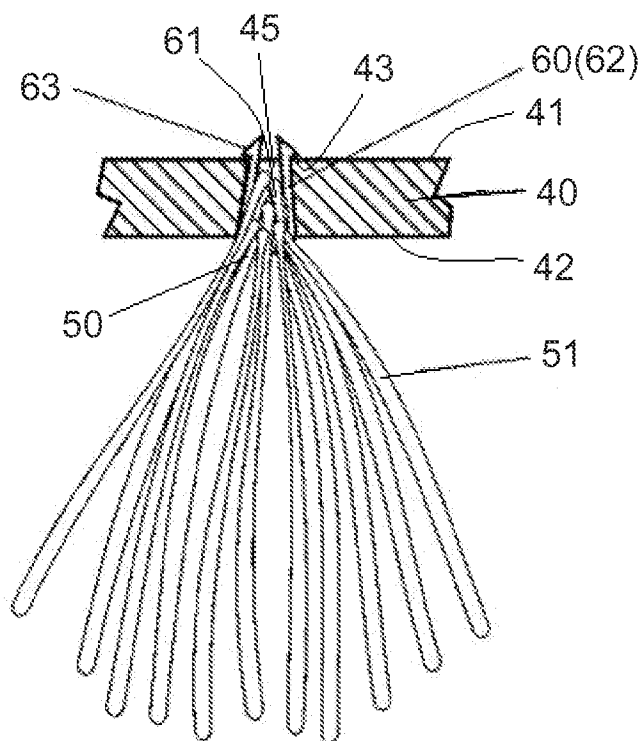


FIG. 3

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**FIG. 4****FIG. 5**

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**FIG. 6****FIG. 7**

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2014/018171**A. CLASSIFICATION OF SUBJECT MATTER****A47L 13/24(2006.01)i**

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

A47L 13/24; A46B 9/04; A46B 1/00; A46D 3/00; A47L 13/20

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & Keywords: mop, head, strip, cloth, opening

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CN 102835941 A (SHANGHAI SHANGDE EXPERIMENTAL SCHOOL) 26 December 2012 See abstract, paragraph [0011] and figures 1-2.	1-2, 4, 13-16
Y		3, 5-12
Y	US 2004-0177462 A1 (WILLIAM R. BROWN et al.) 16 September 2004 See abstract, paragraphs [0047]-[0052] and figures 8-16C.	3, 5-12
A	US 3328822 A (LICIO SELLESI) 04 July 1967 See abstract, column 1, line 49-column 2, line 20 and figures 1-2.	1-16
A	US 2007-0169292 A1 (ESTRELLA CABRERO GOMEZ et al.) 26 July 2007 See abstract, paragraphs [0024]-[0034] and figures 1-9.	1-16
A	US 2004-0158948 A1 (DAVID R. SANDER et al.) 19 August 2004 See abstract, paragraphs [0060]-[0063] and figures 1-5.	1-16



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:

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Date of the actual completion of the international search

23 May 2014 (23.05.2014)

Date of mailing of the international search report

23 May 2014 (23.05.2014)

Name and mailing address of the ISA/KR

International Application Division
Korean Intellectual Property Office
189 Cheongsu-ro, Seo-gu, Daejeon Metropolitan City, 302-701,
Republic of Korea

Facsimile No. +82-42-472-7140

Authorized officer

KIM, Tae Hoon

Telephone No. +82-42-481-8407



INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2014/018171

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