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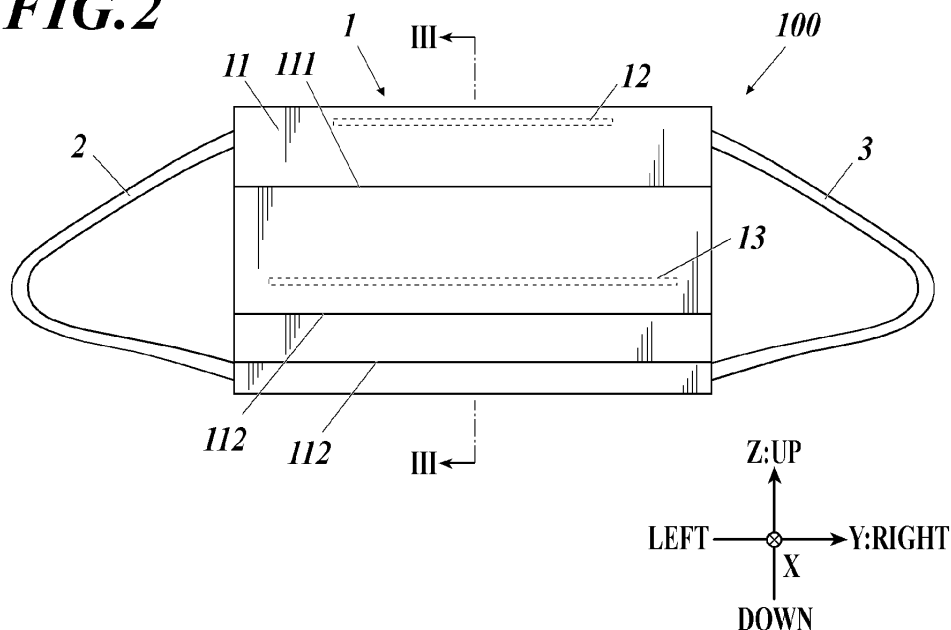
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(54) **MASK**

(57) A mask (100) with a main mask body section (1) that covers the target area of a wearer's face, and a right ear loop (2) and a left ear loop to fasten the main mask body section (1) to the wearer's ears, wherein the main body section (1) has a mouth area-reinforcing member

(13) for procuring space between the wearer's mouth and the main mask body section. The mouth area-reinforcing member (13) is provided below the vertical middle of the main mask body section (1). As a result, it is possible to procure sufficient space around the lower lip area.

FIG.2



Description

TECHNICAL FIELD

[0001] The present invention relates to a mask for covering, for example, the nose and mouth on a wearer's face.

BACKGROUND ART

[0002] Some masks are used for daily life purposes, in the case of illness or in dispersal of dust such as pollen and yellow sand, for example. Some of such masks has pleats in the main body of the masks and can be unfolded upward and downward when being worn.

[0003] Although such a pleated mask can be unfolded in the up-down direction and the size of the mask is easily adjusted by the degree of unfolding of the pleats being adjusted in accordance with a mouth movement or a face size, a mouth space may become narrow or may be crushed due to respiration depending on how the pleats are folded.

[0004] Present in this regard is a mask in which a mouth space is ensured by a reinforcement member being inserted at the center of the mask in the up-down direction (see, for example, Patent Document 1).

CITATION LIST

Patent Document

[0005] Patent Document 1: JP 2007-97904 A

SUMMARY OF INVENTION

Technical Problem

[0006] The lower lip mainly moves during respiration or conversation, and thus the reinforcement member needs to ensure a sufficient space between the main body of the mask and the lower lip. In the mask described in Patent Document 1, however, the reinforcement member is provided at the center of the mask in the up-down direction, and thus the reinforcement member is positioned between the wearer's upper and lower lips in many cases and no sufficient space can be ensured around the lower lip.

[0007] An object of the present invention is to provide a mask with which a sufficient space can be ensured around the lower lip.

Solution to Problem

[0008] In order to solve the above problems, a mask according to the present invention described in claim 1 includes: a mask main body that covers a target part on a wearer's face; and a pair of right and left ear hooks for locking the mask

main body to the wearer's ears, wherein the mask main body includes a mouth reinforcement member for ensuring an interval between a wearer's mouth and the mask main body, and

5 the mouth reinforcement member is provided below a center of the mask main body in an up-down direction.

[0009] According to the present invention, it is possible to ensure a wide space around a wearer's lower lip when the mask is worn.

10 [0010] In the mask described in claim 2 according to claim 1, the mask main body includes a plurality of pleats unfoldable in the up-down direction, and an interval of the plurality of pleats in the up-down direction is widest at a part including the center of the mask main body in the up-down direction.

15 [0011] According to the present invention, it is possible to prevent a fold from being formed at or near the center of the mask main body in the up-down direction, which faces a wearer's mouth when the mask is worn. As a result, the wearer's mouth space is ensured with ease.

20 [0012] In the mask described in claim 3 according to claim 1 or 2, the mask main body includes a plurality of pleats unfoldable in the up-down direction, and the plurality of pleats include an upper pleat which is a fold projecting upward and formed above a center of a front surface of the mask main body in the up-down direction and a lower pleat which is a fold projecting downward and formed below the center of the front surface of the mask main body in the up-down direction.

25 [0013] According to the present invention, the mask is easily unfolded upward and downward about the center of the mask main body in the up-down direction.

[0014] In the mask described in claim 4 according to claim 3, the upper pleat includes a plurality of upper pleats and the lower pleat includes a plurality of lower pleats.

35 [0015] According to the present invention, the extent of spreading of the mask is easily adjusted at both the upper part and the lower part of the mask.

[0016] In the mask described in claim 5 according to any one of claims 2 to 4, the intervals of the pleats are all different.

[0017] According to the present invention, it is possible to arrange the plates in an appropriate position by changing the interval for each pleat.

45 [0018] In the mask described in claim 6 according to any one of claims 1 to 5, the mask main body includes a nose reinforcement member at an upper part.

[0019] According to the present invention, it is possible to prevent gap generation between the mask main body and a wearer's face by enhancing the close contact with the upper part of the mask main body.

Advantageous Effects of Invention

55 [0020] According to the present invention, it is possible to provide a mask with which a sufficient space can be ensured near the lower lip.

BRIEF DESCRIPTION OF DRAWINGS

[0021]

Fig. 1 is a perspective view illustrating a mask according to an embodiment;
 Fig. 2 is a front view illustrating the mask according to the embodiment;
 Fig. 3 is a cross-sectional view taken along line III-III in Fig. 2; and
 Fig. 4 is a front view illustrating a mask according to a modification example.

DESCRIPTION OF EMBODIMENTS

[0022] Hereinafter, specific aspects of a mask according to an embodiment of the present invention will be described with reference to Figs. 1 to 4. The technical scope of the present invention is not limited to the illustrated examples and is determined based on the description of the claims.

[0023] In the following description, X, Y, Z, front-back, right-left, and up-down directions are defined as illustrated in Fig. 1. In Figs. 2 and 4, the near side of the drawings is the front and the far side of the drawings is the back. In Fig. 3, the near side of the drawing is the right side and the far side of the drawing is the left side.

(Configuration of Embodiment)

(Overall Configuration)

[0024] As illustrated in Figs. 1 and 2, a mask 100 is provided with a mask main body 1 for covering, for example, the nose, mouth, and chin on a wearer's face, a right ear hook 2 for locking the mask main body 1 to the wearer's right ear, and a left ear hook 3 for locking the mask main body 1 to the wearer's left ear. The mask 100 is worn with the back surface side of the mask 100 facing the wearer's face.

(Mask Main Body)

[0025] The mask main body 1 is provided with a sheet 11, a nose reinforcement member 12 attached near the upper end of the sheet 11, and a mouth reinforcement member 13 attached near the center of the sheet 11 in the up-down direction.

(Sheet)

[0026] The sheet 11 is a sheet-shaped member formed in a substantially rectangular shape in front view as illustrated in Fig. 2 and is formed by stacking a plurality of sheet materials.

[0027] The sheet 11 is formed to be 120 mm to 210 mm in the Y direction and 70 mm to 100 mm in the Z direction. Preferably, the sheet 11 is formed to be 145

mm to 175 mm in the Y direction and 80 mm to 90 mm in the Z direction.

[0028] The sheet 11 is formed by, for example, stacking the sheet materials in three layers in the order of a front surface side non-woven fabric, a filter, and a back surface side non-woven fabric. Specifically, as for the sheet materials, polypropylene spunbond, polyethylene spunbond, nylon spunbond, or the like is used as the non-woven fabrics. Polypropylene melt blow, rayon spunbond, or the like is used as the filter.

[0029] Most preferably, nylon spunbond is used as the non-woven fabrics and polypropylene melt blow is used as the filter.

[0030] The layer structure of the sheet 11 is not limited to the structure described above. For example, a sheet material may be further added for a further multilayer structure to be formed or the sheet 11 may be formed of fewer sheet materials.

[0031] After these sheet materials are stacked, the sheet 11 is formed by folding such that an upper pleat 111 (described later) and lower pleats 112 and 112 (described later) are formed and that the upper, lower, left, and right ends are welded by means of heat, ultrasonic waves, or the like.

(Pleats)

[0032] The sheet 11 is folded in the up-down direction as illustrated in Fig. 3. As a result, the upper pleat 111 and the lower pleats 112 and 112 are formed on the front surface side as illustrated in Figs. 1 to 3. When the mask 100 is worn, the upper pleat 111 and the lower pleats 112 and 112 are unfolded in the up-down direction. As a result, the sheet 11 has a three-dimensional mountain shape bulging outward and the nose, mouth, chin, and the like on the wearer's face are covered.

(Upper Pleat)

[0033] As illustrated in Figs. 1 to 3, the upper pleat 111 is a fold projecting upward and formed above the center of the front surface of the sheet 11 in the up-down direction. The upper pleat 111 can be unfolded in the up-down direction. In the present embodiment, the single upper pleat 111 is provided on the sheet 11.

(Lower Pleats)

[0034] As illustrated in Figs. 1 to 3, the lower pleats 112 and 112 are folds projecting downward and formed below the center of the front surface of the sheet 11 in the up-down direction. The lower pleats 112 and 112 can be unfolded in the up-down direction. In the present embodiment, the two lower pleats 112 and 112 are provided on the sheet 11.

(Pleat Disposition Intervals)

[0035] In the present embodiment, the upper pleat 111 and the lower pleats 112 and 112 are provided on the sheet 11 at the following intervals. The pleat intervals include the interval between the upper pleat 111 and the upper end edge of the mask and the interval between the lower end edge of the mask and the lower of the lower pleats 112 and 112.

[0036] First, the upper pleat 111 and the lower pleats 112 and 112 are formed such that the width of the part between the upper of the lower pleats 112 and 112 and the upper pleat 111 including the center of the sheet 11 in the up-down direction is the widest. Specifically, the part is formed such that the width of the part is at least one-third of the width of the sheet 11 in the up-down direction.

[0037] Further, it is desirable that the upper pleat 111 and the lower pleats 112 and 112 are disposed such that the intervals are all different.

[0038] The up-down width of the folded part formed in each pleat may be equal in every pleat or may be different for each pleat. For example, the sheet 11 can be evenly spread in each pleat when the width of the folded part is equal in every pleat. When the width of the folded part is increased in the upper pleat 111, the upper part of the sheet 11 can be greatly spread. When the width of the folded part is increased in the lower pleats 112 and 112, the lower part of the sheet 11 can be greatly spread.

(Nose Reinforcement Member)

[0039] The nose reinforcement member 12 is provided for the upper part of the mask main body 1 to follow along the shape of the wearer's nose and the surroundings without a gap. As illustrated in Fig. 2, the nose reinforcement member 12 is provided along the upper end edge of the sheet 11.

[0040] The nose reinforcement member 12 is a plastic member that is long in the right-left direction. As illustrated in Fig. 2, the nose reinforcement member 12 is formed to be shorter than the lateral width of the sheet 11 and have a length of approximately 80 mm to 135 mm, preferably 90 mm to 120 mm in the right-left direction.

[0041] Any plastic material can be used as the material of the nose reinforcement member 12. For example, polypropylene resin, polyethylene resin, or polyethylene terephthalate resin is used, but most preferably, polypropylene resin is used.

[0042] The nose reinforcement member 12 is attached to the sheet 11 by, for example, welding the sheet materials of the sheet 11 to the front and back by means of heat, ultrasonic waves, or the like so as to form a bag-shaped space substantially coinciding in shape with the nose reinforcement member 12 and placing the nose reinforcement member 12 in the space.

(Mouth Reinforcement Member)

[0043] The mouth reinforcement member 13 is provided to ensure a gap between the mask main body 1 and the vicinity of the wearer's mouth. As illustrated in Figs. 2 and 3, the mouth reinforcement member 13 is provided at the position of the sheet 11 that is between the upper pleat 111 and the upper of the lower pleats 112 and 112.

[0044] The mouth reinforcement member 13 is a plastic member that is long in the right-left direction. As illustrated in Fig. 2, the mouth reinforcement member 13 is formed to be slightly shorter than the lateral width of the sheet 11 and have a length of approximately 100 mm to 150 mm, preferably 115 mm to 145 mm in the right-left direction.

[0045] Any plastic material can be used as the material of the mouth reinforcement member 13. For example, polypropylene resin, polyethylene resin, or polyethylene terephthalate resin is used, but most preferably, polypropylene resin is used as in the case of the nose reinforcement member 12.

[0046] The mouth reinforcement member 13 is attached slightly below the center of the sheet 11 in the up-down direction. Specifically, it is desirable that the mouth reinforcement member 13 is attached at a position shifted downward by 5 mm to 10 mm from the center of the sheet 11 in the up-down direction.

[0047] As in the case of the nose reinforcement member 12, the mouth reinforcement member 13 is attached to the sheet 11 by, for example, welding the sheet materials of the sheet 11 to the front and back by means of heat, ultrasonic waves, or the like so as to form a bag-shaped space substantially coinciding in shape with the mouth reinforcement member 13 and placing the mouth reinforcement member 13 in the space.

[0048] In this regard, it is difficult to visually recognize the mouth reinforcement member 13 from the front if the bag-shaped space is formed without the sheet material at the foremost part of the sheet 11. The difficulty is desirable from the viewpoint of the appearance of the mask 100.

(Ear Hooks)

[0049] The right ear hook 2 and the left ear hook 3 are string-shaped members formed of polyurethane or the like. The right ear hook 2 is provided on the right side of the mask main body 1 and the left ear hook 3 is provided on the left side of the mask main body 1. The right ear hook 2 and the left ear hook 3 are respectively attached to the ends of the sheet 11 by, for example, being welded by means of heat, ultrasonic waves, or the like.

(Specific Disposition Method)

[0050] In the mask 100 according to the present embodiment, the upper pleat 111, the lower pleats 112 and 112, and the mouth reinforcement member 13 are, for

example, disposed as follows in a case where the sheet 11 has a width of 90 mm in the up-down direction.

[0051] First, the upper pleat 111 is disposed at a position separate from the upper end of the sheet 11 by 25 mm such that a fold is to be disposed between the nose and the mouth.

[0052] The upper of the lower pleats 112 and 112 is disposed at a position separate from the upper pleat 111 by 40 mm such that the wearer's mouth part is to be covered with the no-fold part of the sheet 11.

[0053] The lower of the lower pleats 112 and 112 is disposed at a position separate from the upper of the lower pleats 112 by 15 mm to wrap around under the chin.

[0054] The mouth reinforcement member 13 is disposed at a position shifted downward by 5 mm from the center of the mask main body 1 in the up-down direction.

(Effect of Embodiment)

[0055] In the mask 100 according to the present embodiment, the mouth reinforcement member 13 for ensuring a space for the wearer's mouth is attached slightly below the center of the mask main body 1 in the up-down direction. As a result, when the mask 100 is worn, the mouth reinforcement member 13 is capable of ensuring a wide space around the lower lip and the mask 100 is unlikely to be touched when the lower lip is moved for conversation or respiration. In addition, it is possible to prevent the mouth reinforcement member 13 from hindering respiration by coming to the front of the opening of the wearer's mouth.

[0056] The pleat interval is the widest at or near the center of the mask main body 1 in the up-down direction. Accordingly, it is possible to prevent a fold from being formed at or near the center of the mask main body 1 in the up-down direction, which faces the wearer's mouth when the mask 100 is worn. As a result, the wearer's mouth space is ensured with ease.

[0057] The upper pleat 111, which is a fold projecting upward, is formed above the center of the mask main body 1 in the up-down direction. The lower pleats, which are folds projecting downward, are formed below the center of the mask main body 1 in the up-down direction. As a result, the mask main body 1 is easily unfolded upward and downward about the center of the mask main body 1 in the up-down direction.

[0058] In a case where the pleat intervals are all different, it is possible to change the intervals for each pleat to dispose the pleats in an appropriate arrangement.

(Modification Example 1)

[0059] In a mask 100A according to the modification example that is illustrated in Fig. 4, two upper pleats 111 and 111 are provided. The rest of the configuration is identical to that of the embodiment described above.

[0060] The present modification example is provided with the plurality of upper pleats 111 and 111 and the

plurality of lower pleats 112 and 112, and thus the extent of spreading is easily adjusted at both the upper part and the lower part of the mask.

[0061] In the mask 100A according to the present modification example, the upper pleats 111 and 111, the lower pleats 112 and 112, and the mouth reinforcement member 13 are, for example, disposed as follows in a case where a sheet 11A has a width of 90 mm in the up-down direction.

[0062] First, the upper of the upper pleats 111 and 111 is disposed at a position separate from the upper end of the sheet 11A by 10 mm such that a fold is to be disposed at the tip of the nose.

[0063] The lower of the upper pleats 111 and 111 is disposed at a position separate from the upper of the upper pleats 111 and 111 by 15 mm such that a fold is to be disposed between the nose and the mouth.

[0064] The upper of the lower pleats 112 and 112 is disposed at a position separate from the lower of the upper pleats 111 and 111 by 40 mm such that the wearer's mouth part is to be covered with a no-fold part of the sheet 11.

[0065] The lower of the lower pleats 112 and 112 is disposed at a position separate from the upper of the lower pleats 112 and 112 by 20 mm to be applied to the chin.

[0066] The mouth reinforcement member 13 is disposed at a position shifted downward by 10 mm from the center of the mask main body 1 in the up-down direction.

[0067] The upper pleats and the lower pleats are not limited to the illustration in number. For example, three or more upper pleats may be provided, and a single lower pleat or three or more lower plates may be provided.

[0068] The mouth reinforcement member 13 may be disposed at the part folded in the lower pleat 112 on the inner side of the sheet 11. In this case, the position of the mouth reinforcement member 13 can be moved upward and downward in accordance with the degree of opening of the lower pleat 112. In a state where the lower pleat 112 is not open, the part of the sheet 11 where the mouth reinforcement member 13 is attached cannot be viewed from the front, and thus the appearance of the mask 100 can be improved.

INDUSTRIAL APPLICABILITY

[0069] The present invention can be suitably used in the field of mask manufacturing.

REFERENCE SIGNS LIST

[0070]

100	MASK
1	MASK MAIN BODY
111	UPPER PLEAT (PLEAT)
112	LOWER PLEAT (PLEAT)
12	NOSE REINFORCEMENT MEMBER

- 13 MOUTH REINFORCEMENT MEMBER
- 2 RIGHT EAR HOOK (EAR HOOK)
- 3 LEFT EAR HOOK (EAR HOOK)

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Claims

1. A mask comprising:

a mask main body that covers a target part on a wearer's face; and
 a pair of right and left ear hooks for locking the mask main body to the wearer's ears, wherein the mask main body comprises a mouth reinforcement member for ensuring an interval between a wearer's mouth and the mask main body, and
 the mouth reinforcement member is provided below a center of the mask main body in an up-down direction.

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2. The mask according to claim 1, wherein the mask main body comprises a plurality of pleats unfoldable in the up-down direction, and an interval of the plurality of pleats in the up-down direction is widest at a part including the center of the mask main body in the up-down direction.

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3. The mask according to claim 1 or 2, wherein the mask main body comprises a plurality of pleats unfoldable in the up-down direction, and the plurality of pleats comprise an upper pleat which is a fold projecting upward and formed above a center of a front surface of the mask main body in the up-down direction and a lower pleat which is a fold projecting downward and formed below the center of the front surface of the mask main body in the up-down direction.

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4. The mask according to claim 3, wherein the upper pleat comprises a plurality of upper pleats and the lower pleat comprises a plurality of lower pleats.

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5. The mask according to any one of claims 2 to 4, wherein the intervals of the pleats are all different.

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6. The mask according to any one of claims 1 to 5, wherein the mask main body comprises a nose reinforcement member at an upper part.

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FIG.1

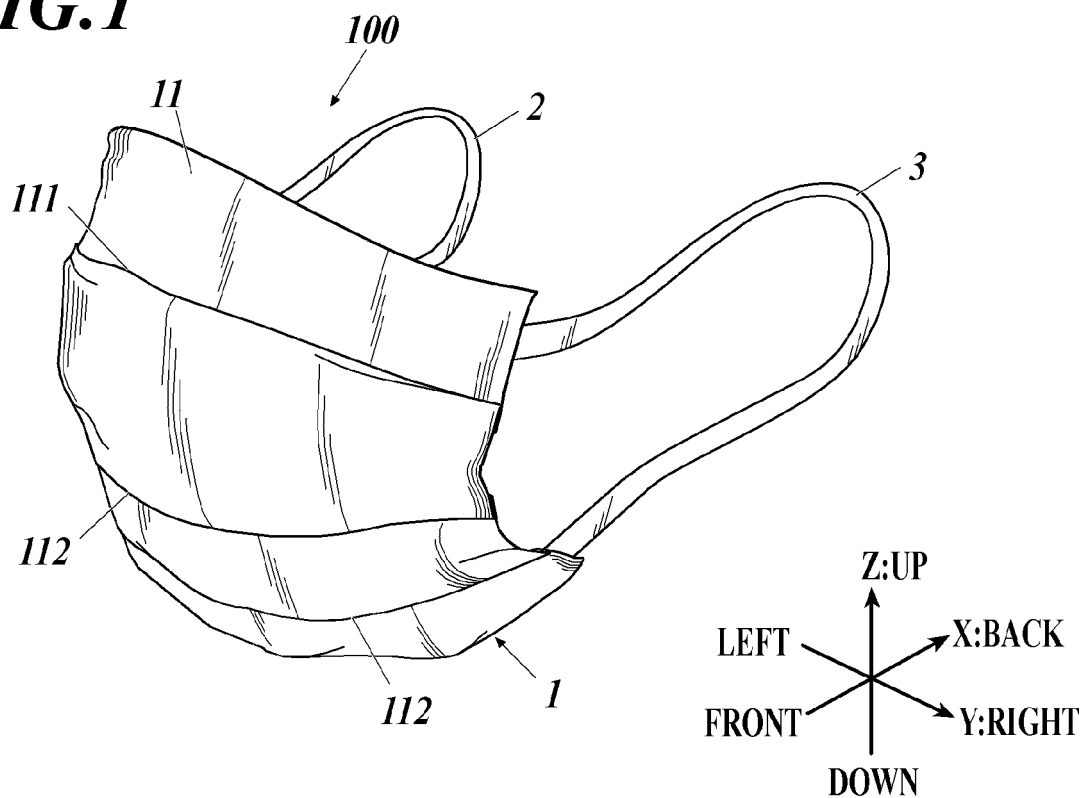


FIG.2

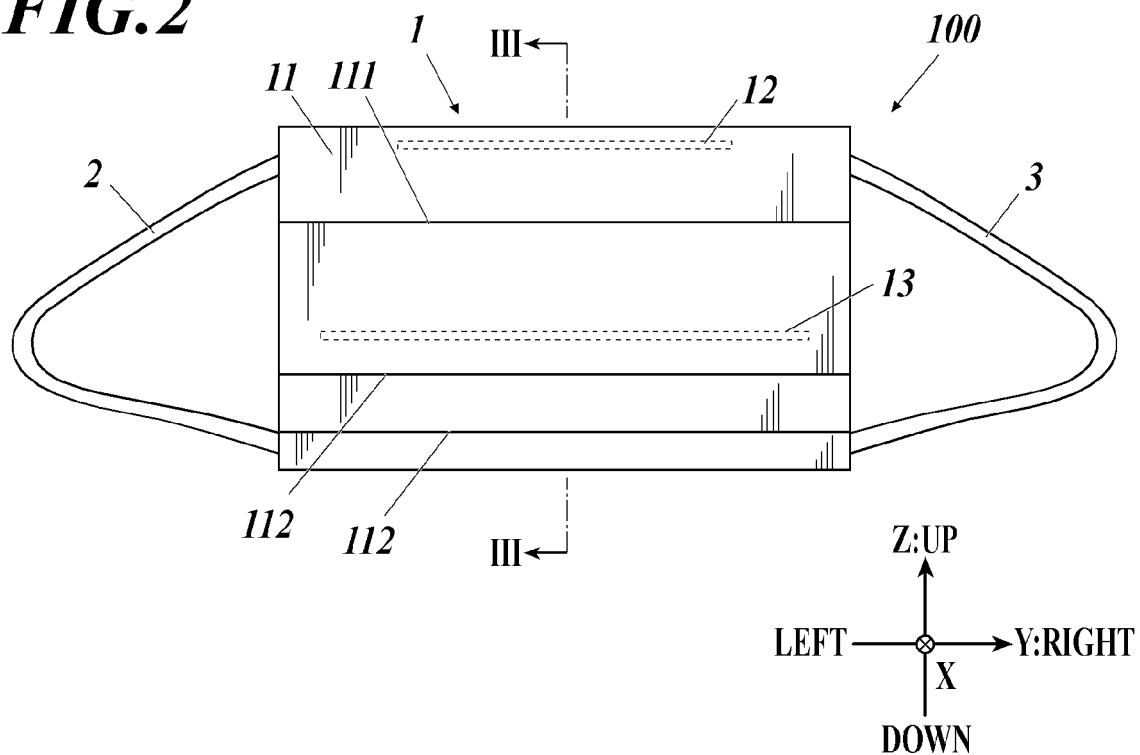


FIG.3

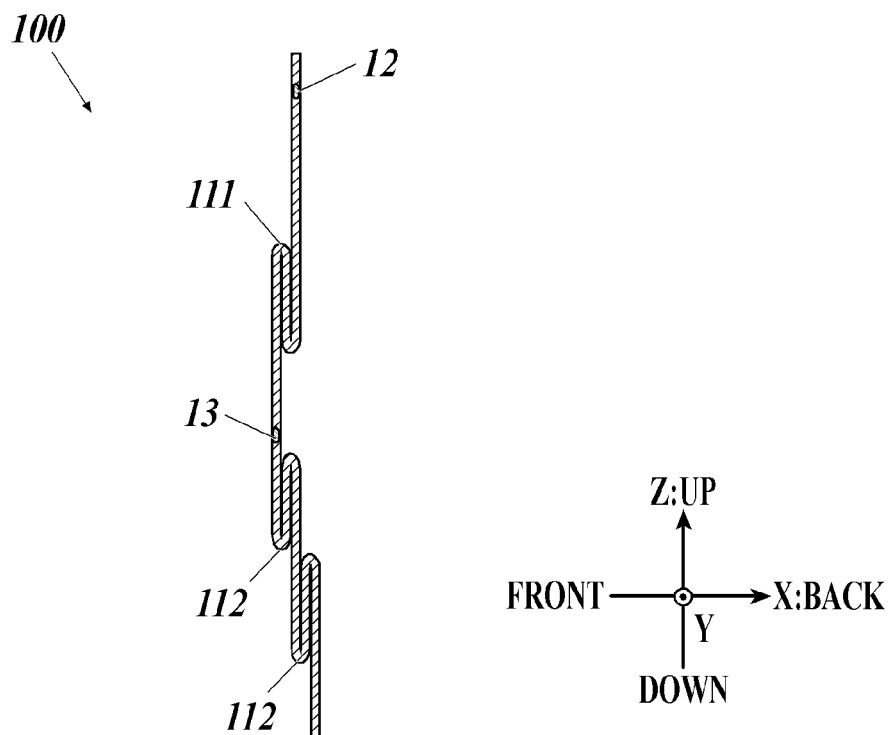
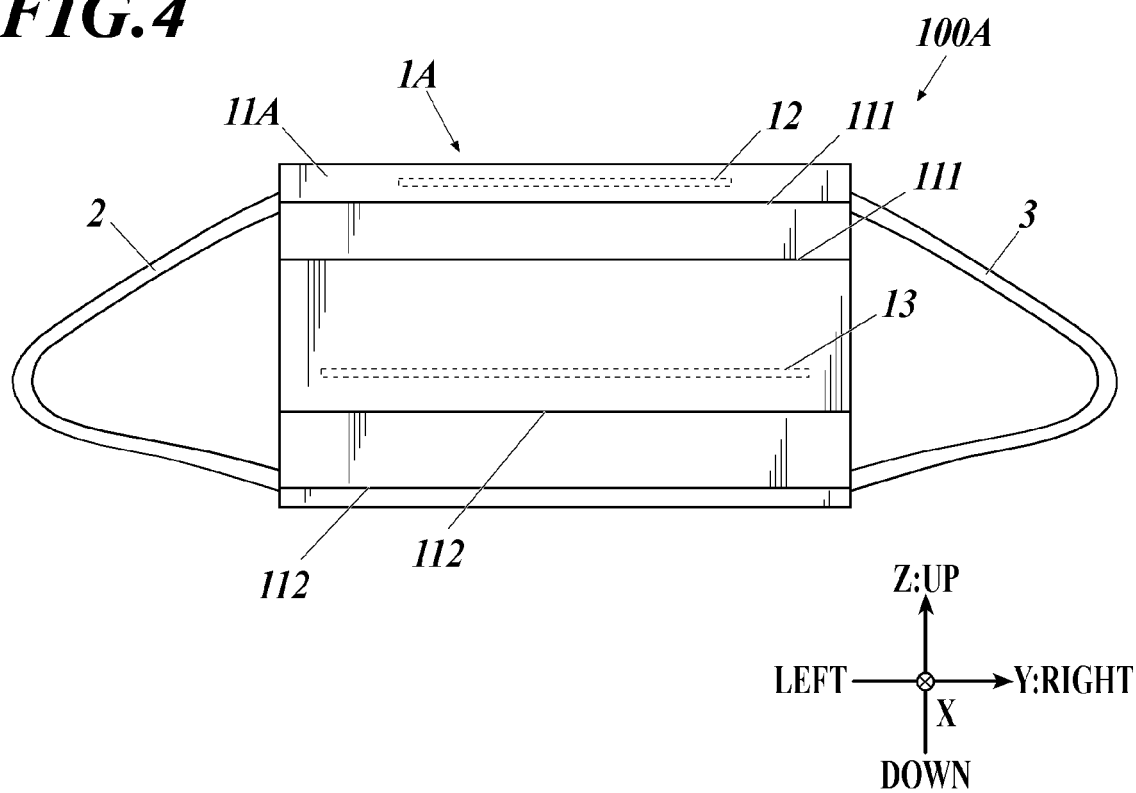


FIG.4



INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2018/009428

A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl. A41D13/11 (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)

Int.Cl. A41D13/11

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

Published examined utility model applications of Japan 1922-1996

Published unexamined utility model applications of Japan 1971-2018

Registered utility model specifications of Japan 1996-2018

Published registered utility model applications of Japan 1994-2018

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y	JP 2011-36574 A (JUNKODO KK) 24 February 2011, paragraphs [0033], [0035], [0037], [0038], fig. 6 (Family: none)	1, 6 1-6
X Y	JP 11-99216 A (SANEMU PACKAGE KK) 13 April 1999, paragraphs [0021], [0036], [0043], [0049], fig. 1, 4, 6 & EP 894443 A2, paragraphs [0022], [0038], [0045], [0052], fig. 1, 4, 6 & TW 498763 U & KR 10-0518114 B1	1, 6 1-6



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:

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"P" document published prior to the international filing date but later than the priority date claimed

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later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

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document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

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document member of the same patent family

Date of the actual completion of the international search

26 April 2018 (26.04.2018)

Date of mailing of the international search report

15 May 2018 (15.05.2018)

Name and mailing address of the ISA/
Japan Patent Office
3-4-3, Kasumigaseki, Chiyoda-ku,
Tokyo 100-8915, Japan

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Telephone No.

Form PCT/ISA/210 (second sheet) (January 2015)

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2018/009428

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 2007-97904 A (KAO CORP.) 19 April 2007, paragraphs [0011]-[0015], [0019], [0021], [0028], [0035], fig. 1-2 (Family: none)	1-6
Y	JP 3126242 U (ONE LIFE CO., LTD.) 19 October 2006, paragraphs [0010], [0013], fig. 1-4 (Family: none)	1-6

Form PCT/ISA/210 (continuation of second sheet) (January 2015)

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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