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SPACER FOR USE IN CLOTHING

Abstract

A spacer encouraging continuous ventilation, the spacer comprising a clothing contact portion and a body contact portion. For example, a hood support spacer, a cuff support spacer, and a spacer that supports an opening in clothing or the like. Each spacer ensures a space for air to pass, it is easy to use, easy to put on and take off, has a simple shape, is capable of cost reduction. It avoids the discomfort of wearing clothing directly on the body, and a larger space increases ventilation and the degree of adhesion is low by air flow around the part of the body, it demonstrates its convenience. In addition, partial contact without other contacts, it has the feature that it can support the clothing and ensure a space for air to pass.

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Background/Summary

TECHNICAL FIELD

[0001] The present invention relates to a spacer for encourage continues air flow.

RELATED APPLICATIONS

[0002] This application claims priority from Japanese Patent Application No. 2023-116358, 2024-079131, 2024-109284.

[0003] The entire teachings of the above application are incorporated herein by reference.

BACKGROUND OF THE INVENTION

[0004] A known clothing is distributed on the market as wearing directly on the body, is worn in contact with the body even if want to avoid direct wearing due to the influence of climate such as rain, sunshine, and heat. In particular, at openings such as clothing hood, cuffs and the like, it is desirable to avoid the discomfort of blowing wind and sticking to the body by the air movement in the rain.

[0005] Such as helmets with spacer inside are distributed in the market to prevent direct contact between the helmet and the head, but they are fixed directly to the head.

[0006] If there is a spacer that does not direct wearing and avoids the discomfort of directly wearing clothing on the body, it is easy to worn, cool in hot seasons, and comfortably worn in rainy weather. As rainwear, a rain gear has already been published, with shape holding hood-forming object (see Related document 1).

DESCRIPTION OF THE RELATED ART

[0007] Related document 1: Japanese Utility Model Application No.56-00881

TECHNICAL PROBLEM

[0008] Related document 1 is described that “Rain gear characterized in that a hood body is formed so that the front and bottom are opened by swelling due to blowing of air, and the body is provided with sound-hearing parts at positions corresponding to the ears on both sides, and air blowing ports at appropriate positions.” The structure of Related document 1 has a shape holding member that supports exist on all over the head the entire head other than the face side, and the “sound-hearing parts at positions corresponding to the ears on both sides” are located, and it is in close contact so that sound can be easily heard.

[0009] There is no description the shape holding hood-forming object encourages air flow for, and the discomfort caused by such as clothing clinging to the head is eliminated, but it is no simple shape that supports the entire clothing hood by partially contacting with such as clothing, being constructed by filling it with air, so it takes a considerable time to prepare before putting it on, therefor it is difficult to say that it is highly feasible rain gear.

SUMMARY OF INVENTION

Solution to Problem

[0010] The present invention is a spacer providing inside a clothing, and due to achieve the above object. The spacer comprises a clothing contact portion in contact with the clothing and a body contact portion in contact with a part of the body. The clothing contact portion is configured to keep a shape holding space of the clothing with a space apart between the clothing and the body, and is in partial contact with the clothing at least. The body contact portion protrudes to a body

side, maintain the shape holding space and supporting the clothing.

[0011] Since the clothing contact portion and the body contact portion are present between the clothing and the body upon mounting, the distance of the space apart between the clothing and the body is determined by the action of either or both of the clothing and of the body part, which transmit to the clothing contact portion and the body contact portion, the spacer is capable of securing a space for air to pass.

Advantageous Effects of Invention

[0012] As described above, the spacer of the present invention is a spacer for keeping a shape in like a clothing which leave a distance between the clothing and the part of the body, and improving air flow. It is easy to use, easy to put on and take off, has a simple shape, has low adhesion because it is capable of ensuring the space for air to pass, excellent ventilation, and a simple design that is capable of keeping the costs down. It avoids the discomfort of wearing clothing directly on the part of the body, and a larger space increases air flow, making it cooler in hot weather and more comfortable to wear in wet weather. In the case when the clothing contact portion that supports along the clothing being made of a plate-like, and as a spacer located at opening of the head, it is capable of carrying compactly as a case of clothing by turning it inside out depending on the size.

Description

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] FIG. 1A is a front view of the present invention with a substantially inverted U-shape clothing contact portion in which the body contact portions are located on the left and right sides of the head. (Embodiment 1)

[0014] FIG. 1B is a right-side view of the present invention with a substantially inverted U-shape clothing contact portion in which the body contact portions are located on the left and right sides of the head. (Embodiment 1)

[0015] FIG. 2A is a front view of the present invention with a bowl-shape clothing contact portion illustrating a schematic in which the body contact portions are capable of be selected. (Embodiment 2)

[0016] FIG. 2B is a plan view of the present invention with a bowl-shape clothing contact portion illustrating a schematic in which the body contact portions are capable of be selected. (Embodiment 2)

[0017] FIG. 3 is a development view of the present invention with a clothing contact portion that can be expanded before use formation. (Embodiment 3)

[0018] FIG. 4A is A-A'cross-sectional view of the present invention in which the body contact portions are located on the left and right sides of the head, and the terminal parts are as come-into-touched part to the shoulders. (Embodiment 3)

[0019] FIG. 4B is a right-side view of the present invention in which the body contact portions are located on the left and right sides of the head, and the terminal parts are as come-into-touched part to the shoulders. (Embodiment 3)

[0020] FIG. 5A is a perspective view the present invention with the body position fixing tool. (Embodiment 3)

[0021] FIG. 5B is a perspective view of the present invention with the body position fixing tool, which sandwiched a clothing or the like. (Embodiment 3)

[0022] FIG. 6A is a rear view of the present invention with a substantially inverted V-shape clothing contact portion in which the body contact portion is located behind the head. (Embodiment 4)

[0023] FIG. 6B is a plan view of the present invention with a substantially inverted V-shape clothing contact portion in which the body contact portion is located behind the head. (Embodiment

4)

[0024] FIG. 7A is a front view of the present invention in which the body contact portion is located on the back side of the hand. (Embodiment 5)

[0025] FIG. 7B is a A-A' cross-sectional views of the present invention in which the body contact portion is located on the back side of the hand. (Embodiment 5)

[0026] FIG. 7C is a B-B' cross-sectional view of the present invention in which the body contact portion is located on the back side of the hand. (Embodiment 5)

DETAILED DESCRIPTION OF THE INVENTION

[0027] Hereinafter, the details and embodiments will be described of the present invention, "partial contact on the clothing at least", "hang on the whole", "continuous ventilation", "the clothing contact portion and the body contact portions is present between the clothing and the part of the body", "the terminal parts are as come-into-touched part", based on FIGS. 1A to 7C.

[0028] "Partial contact on the clothing at least" signifies that, unlike existing structures in which such as provides the contact object in the whole shape holding space of the clothing, but refers to a structure in which provides the clothing contact portion **1** partially without other clothing contact, even in this configuration and is along the clothing, it is possible to support the entire clothing including the contact parts. This signifies that the clothing exists, but non-hang part present on the clothing contact portion **1**.

[0029] For example, in an opening of the head hood, when looking at the hood from the front, unlike a structure that hangs over the entire hood of clothing including the rear of the hood, this refers to a configuration in which the clothing contact portion **1** is provided a part in the vicinity area around the top of the head from above the left ear to above the right ear of such as clothing.

[0030] In other words, it indicates that the clothing contact portion **1** is partially present, such as in an upper part of the head and the part excluding the rear part of the entire head hood, unlike a structure provides supporting in the entire hood of the clothing, the clothing or the like **9** provide in where the clothing contact portion **1** is located with no other contacts.

[0031] It is also possible to make that the clothing contact portion **1** being provided as a whole hood, although it is not excluded from the present invention, the clothing contact portion **1** become possible to support and air flow the entire clothing hood by provide at least partially, without other contact part, the clothing contact portion **1** may be provided in part, or in whole.

[0032] "Hang on the whole" signifies, for example, the entire clothing hood covers thoroughly the clothing hood, from the opening to the rear. The spacer of Related document **1** is arranged on all over the head, making it easy to support the entire opening, and is shaped to covers the entire head except for the opening.

[0033] In the present invention, the clothing contact portion **1** dose not covers thoroughly the entire head, "partial contact with the clothing at least", even the case of partially contacted with the clothing hood, the whole part becomes possible to be supported. Although it may arrange on all over the clothing hood, the clothing contact portion **1** is a configuration being capable of supporting entire clothing hood even if the area and the cost is reduced.

[0034] Here, arranged in contact with the part of the body signifies that a state of being placed by covering or put on the part of the body upon mounting.

[0035] For example, if it is in an opening of the head hood, when the head hood is worn, the body contact portion **6** is arranged so that it sets on the head, without fixing it to the head, and by the body contact portion **6** is sandwiched between the head hood of the clothing and the head, arranged having a space between the head and the head hood, and being capable of supporting the head hood are mentioned. The space is more than 10 mm apart from contact of the body part, and if it is 30 mm to 50 mm, it is a preferred distance for better air flow.

[0036] A shape angle of a body part corresponding to the surface serving as the contact surface **13** varies depending on individual and the parts of the body differences, and by the action of either or both of the clothing and the part of the body, which transmit to the clothing contact portion **1** and

the body contact portion **6**, such as the weight of the clothing and the shape angle of the body part is balanced and keep the overall configuration of the spacer.

[0037] For example, Embodiments 1, 3, and 5 are easy to understand figure in which the position of the body contact portion **6** is different and the shape angle of the body parts is different.

Particularly remarkable example is Embodiment 5, in which the angle between the back side of the hand and the arm changes significantly, and contact with the body parts at keeping a moderate distance apart by the flexible or the like, either or both of the clothing contact portion **1** and the body contact portion **6**. The material of the clothing contact portion **1** and the body contact portion **6** may be any material without limitation, but elastic and flexible ones are preferred, but even hard ones are not excluded.

[0038] There may be the body contact portion **6** come into touch only in partial with the body without other contacts. It signifies that both of contact part and non-contact part of the body contact portion **6** exist relative to the body with contact. Further, examples in the case include, when the body contact portion **6** is sandwiched between a support portion **10** or the like, the body contact portion **6** at both ends of the body contact portion **6** partially touch the part of the body, but pitched part by the support portion **10** or the like is not touch are mentioned. By this partially contact without other contacts, the body contact portion **6** becomes possible to keep having a space for air to pass **14** between the clothing and the body part, and supports the opening and allows continuous ventilation.

[0039] Continuous ventilation signifies that the space is continuous and has no sides that block the flow, allowing air to flow unobstructed. Furthermore, “partial contact of the body contact portion **6**” and “partially provided the clothing contact portion **1**” become possible to support such as clothing even when without other contacts part, with minimal contact configuration symbolizes the compact properties.

[0040] In the case of the entire contact part is in contact with the part of the body, an example is described in Embodiment 4, it is no “partial contact of the body contact portion **6**”.

[0041] “A configuration in which the clothing contact portion **1** and the body contact portion **6** exist between the clothing and the body upon mounting” signifies that, the clothing contact portion **1** and the body contact portion **6** exist between the clothing and the part of the body when viewed in a vertical cross-section. Since this intervened configuration, the distance of the space between the clothing and the part of the body is determined by the action of either or both of the clothing and the part of the body, which transmit to the clothing contact portion **1** and the body contact portion **6**. In other words, it signifies that the configuration that maintain a certain distance between the clothing and the part of the body are determined by the wearing situation.

[0042] As described in the embodiments, when the material is deformable, for example, by the action of either or both of the clothing contact portion **1** and the body contact portion **6**, if the degree of deformation of the body contact portion **6** is large, the distance between the clothing and the part of the body is closer, and if the degree of deformation is small, it becomes farther.

Furthermore, if the clothing contact portion **1** is an elastic material, it signifies that by the action of one or both of the clothing contact portion **1** and the body contact portion **6**, the clothing and the contact surface **13** are balanced by such as the weight of the clothing and the shape angle of the body, and the distance between the clothing and the part of the body is changed and determined.

[0043] “The terminal part is as come-into-touched part” signifies that, when the spacer is worn, the terminal part **12** that is the end of the spacer, which is the lowest height position, is in contact with the shoulder vicinity, and includes that being in contact with the shoulders vicinity of the hood and being shaped along the shoulder as come-into-touched part. In addition, the spacer needs only to have an area large enough to arrange the body contact portion **6**, in the case where the spacer has such as holes or deformations, and refer to the end closest to the shoulder when the spacer is attached.

[0044] The following describes plate-like embodiments in which the outer surface shape of the

clothing contact portion **1** when attached, is a substantially U-shape, a substantially V-shape, a bowl shape. Plate-like objects using any one or a combination of such as a substantially U-shape, a substantial V-shape, a bowl shape, a ring shape, a deformed spherical shape and a square shape, can be easily manufactured, but any shape may be made, and it is not limited to the formation from plate-like objects, and it can be changed in various ways based on the purpose of the present invention, and is not excluded from the present invention.

DETAILED DESCRIPTION OF THE DRAWINGS

[0045] FIG. **1A** is a front view in which the body contact portions **6** of Embodiment 1 of the present invention are located on the left and right sides of the head, and FIG. **1B** is a right-side view in which the body contact portions **6** are located on the left and right sides of the head. This is an Embodiment in which the outer surface shape at the time of wearing is substantially inverted U-shape as seen from the face opening side **2**.

[0046] It signifies an example that the terminal part **12** of the clothing contact portion **1** is positioned above the ears of the head, the clothing contact portion **1** partially provided on the upper part in the entire surface of the head hood due to curve a plate-like object, and contact surfaces **13** are located vicinity both ends of the body contact portions **6** each front and back of the left and right of the head, and are partially contacted and supported at four points of the body contact portions **6**.

[0047] The contact surface **13** in the right-side view of FIG. **1B** is indicated by a dashed line arrow that it is in the vicinity of two places on the front and back of the head side of the body contact portions **6**. The clothing contact portion **1** is shaped along the hood from the vicinity of the face opening side **2** to the vicinity of hood rear **3**. The body contact portions **6** located on the left and right is fixed by the support portion **10**, and caught in the middle part of the body contact portion **6** is visible in the right-side view of FIG. **1B**, and both ends of bulging the body contact portion **6** of non-pinched are support without other contacts by partial contact with the head, and the entire opening is retained.

[0048] The hidden line of the support portion **10** is indicated by a dashed line, and is displayed with one-dotted chain line as an example of the clothing or the like **9** covering the clothing contact portion **1**, and as an example of the position of the head when worn.

[0049] In FIGS. **1A** and **1B**, the clothing contact portion **1** is substantially inverted U-shaped, and the left and right sides have the same shape and the front and rear are the same size from the vicinity of the face opening side **2** to the vicinity of hood rear **3**, although the support portion **10** is illustrated in a simple shape with two slits and curved inward, any shape may be used as long as it is a projecting shape inward. Therefore, the support portion **10** and the body contact portion **6** may be one piece.

[0050] The body contact portion **6** is in contact with the head, and FIGS. **1A** and **1B** illustrate an example in which both ends of the body contact portion **6**, which pinched and bulging out by the support portion **10** are in contact with the head and having a role that is linked to movement due to the elasticity of the foam.

[0051] In the absence of the support portion **10**, the body contact portion **6** is directly bonded, put on and take off from the clothing contact portion **1**, and for example, the case of the clothing contact portion **1** is such as non-slip silicone material coating and other things, including that is already providing with the clothing, the present invention does not exclude any configurations of the clothing contact portion **1** and the body contact portion **6** that can be easily made.

[0052] The material may be any, but preferably made of resin, and the clothing contact portion **1** may be such as LDPE, PP and PET, for example, but it is a material that is flexible and not too hard, and the thickness of 0.05 mm to 1 mm is suitable. Materials that are not affected by the external environment and are easy to process are preferable, and customizable materials will expand the range of options.

[0053] The body contact portion **6** may be consisted in any way, but the body contact portion **6**

may be constructed making it elastic by partially curved inward the clothing contact portion **1**, or harder soft polyurethane foam and other things insert into curved inward space, for example. When the clothing contact portion **1** and the body contact portions **6** are provided separately, for example the support portion **10** and the body contact portions **6** are capable of using as a single unit, and any combination of manufacturing, sales methods, and materials can be changed in various ways based on the purpose of the present invention, and is not excluded from the present invention.

[0054] Further, the position of the body contact portion **6** is not limited to FIGS. **1A** and **1B**, and in the clothing contact portion **1**, which a shape rest on the head is also considered, and as long as it is a shape that being capable of placing on the head, including from covering size over the head to placing size on the head in a small area, it is sufficient to have an area where the body contact portion **6** becomes possible to arrange, and the clothing contact portion **1** can be changed in various ways based on the purpose of the present invention, such as hole processing and deformation, it is not excluded from the present invention.

[0055] Here, explain about “intended for integrated use” of the present invention. If the body contact portion **6** and the clothing contact portion **1** are provided in separately, they are used together as one unit of the present invention spacer, the following are all sold as unfinished parts, the body contact portion **6** is sold individually, a spacer including the left and right parts, or customers adheres them to the clothing contact portion **1**, or by displaying a notice that customers are to be used by gluing it and other things. Therefore, if the clothing contact portion **1** is not integral to the body contact portion **6** and there is no commonality such as shape and material, the body contact portion **6** for the purpose of integrated use with the clothing contact portion **1** is provided in separate parts, they can be changed in various ways based on the purpose of the present invention, such as separate parts, it is not excluded from present invention.

[0056] Furthermore, the clothing contact portion **1**, the support portion **10**, and the body contact portion **6** all integrated may also be molded, and can be changed in various ways based on the purpose of the present invention, and is not excluded from the present invention.

[0057] FIG. **2A** is a front view and FIG. **2B** is a plan view illustrated a schematic of Embodiment **2** of the present invention from which the body contact portion **6** may be selected. It is a bowl-like shaped, and the outer surface shape at the time of wearing on a ground plan view is an embodiment of a substantially circular shape. Such as the top of the head is made into a ring shape being die-cut in a circle, a part is missing like a C-ring, a partially deformed spherical shape, a square shape, or any other shape that may be used to cover so that it rests on the head, examples of various possible changes include.

[0058] It is a simple shape an example that the bowl-shaped embodiment, in which among the entire surface of the head hood, the clothing contact portion **1** partially provided on the upper part of the head around the top of the head **11**, two slits are inserted and curved inward as the support portions **10**, and the body contact portion **6** is inserted and fixed the support portion **10** at a selectable position. The body contact portion **6** is inserted at a selectable position of the support portion **10**, both ends bulging part of non-pinched, thereby support and kept the entire opening by contact with the head partially. The contact surface **13** in the plan view of FIG. **2B** indicates by a dashed line arrow that it is in the vicinity of two points on the head side of the body contact portion **6**.

[0059] “Selectable” refers to that the support portion **10** and the body contact portions **6** are selectable in all directions of 360 degrees centered on the top of the head **11**. The number and position of the support portion **10** and the body contact portion **6** may be any number or position, whether at two places, or more, a plurality of the support portions **10** may be provided and the body contact portions **6** are inserted into such as long-connected-shape.

[0060] It is also possible to make the distance apart more between the clothing and the head by enlarging the body contact portion **6** and increasing the contacting area.

[0061] Further, the clothing contact portion **1** may be changed in various ways based on the

purpose of the present invention, such as a perforated object at vicinity the top of the head **11** and a body made by a partial spherical surface, and is not excluded from the present invention. The two-dotted chain line of FIGS. **2A** and **2B** illustrates, the range of the selectable end of the clothing contact portion **1**, the dashed line indicates the range of the selectable end of the support portion **10**, and a dotted line indicates the range of the body contact portion **6** selectable ends being connected and illustrated in a line for example.

[0062] An example as clothing or the like **9** covering the clothing contact portion **1**, and as a position example of the head when wearing it, describe with one-dotted chain line.

[0063] The body contact portion **6** may be consisted in any way, but for example, the body contact portion **6** becomes possible to be elastic by a harder soft polyurethane foam provide as curved inward parts. When a separate body contact portion **6** is provided for the purpose of integrated use with the clothing contact portion **1**, any method or material may be used, but the support portion **10** and the body contact portions **6** are integrated can be used as one piece, and may be used for example, by such as gluing in appropriate position of the clothing contact portion **1** with a harder soft polyurethane foam or the like as the body contact portion **6**. The contact surfaces **13** area is preferable to be one half or less of the upper half part area of the head in order to minimize the contact surfaces **13** of the body contact portion **6**.

[0064] Further, in FIGS. **2A** and **2B**, the clothing contact portion **1** is described in a bowl-like shape, but vicinity the top of the head **11** may be made into a ring shape in which it is die-cut in a circle, a part is missing like a C-ring, and partially being deformed spherical surface and other things, can be changed in various ways based on the purpose of the present invention and is not excluded from the present invention.

[0065] Here, explain about “intended for integrated use” of the present invention. If the body contact portion **6** and the clothing contact portion **1** are provided in separately, they are used together as one unit of the present invention spacer and these are as unfinished parts, all sold as parts, including the body contact portion **6** is sold individually, or customers adheres them to the clothing contact portion **1**, or by displaying a notice that customers are to be used by gluing it and other things.

[0066] Therefore, if the clothing contact portion **1** is not integral to the body contact portion **6** and there is no commonality such as shape and material, the body contact portion **6** for the purpose of integrated use with the clothing contact portion **1** is provided in separate parts, they can be changed in various ways based on the purpose of the present invention, such as separate parts, it is not excluded from present invention.

[0067] Furthermore, the clothing contact portion **1**, the support portion **10**, and the body contact portion **6** all integrated may also be molded, and can be changed in various ways based on the purpose of the present invention, and is not excluded from the present invention.

[0068] FIG. **3** is a development view of the clothing contact portion **1** before attachment illustrating Embodiment 3 of the present invention. It signifies an example that the clothing contact portion **1** which made by plate-like object supports the hood, a shape with an eaves **7**, the support portion **10** made by two incisions slits, and the terminal part **12** is at the end of come-into-touched part shoulder vicinity **4**, bend toward the shoulder at the hood boundary incision reference line **5** when use. The hood boundary incision reference line **5** indicated by the dashed line is marked as a reference line where the customer makes an incision according to the size of the hood.

[0069] The clothing contact portion **1** may be used simply in which contact the head along the clothing or the like **9**, or it may be put on and take off, and the options for manufacturing and selling in various patterns are expanded according to the customer's needs. In FIG. **3**, an example of a figure in which the clothing contact portion **1** is shaped along the hood, has the same shape and size from the vicinity of the face opening side **2** to the vicinity of hood rear **3** of the left and right sides, but it may also become possible to deformed type, in which the clothing contact portion **1** make close contact with hood the vicinity of the face opening side **2** only, the vicinity of hood rear

3 to change the size, or adjust the size to the hood, and with nothing an eaves 7. The shape of the clothing contact portion 1 and the position, size, and length of the support portion 10 are not limited to FIG. 3, and can be changed in various ways based on the purpose of the present invention, and are not excluded from the present invention.

[0070] If the material may be easily cut, it may be cut according to the size of the hood that the customer has, and the hood boundary incision reference line 5 may make a cut and bent so that the come-into-touched part of shoulder vicinity 4 follows the shape of the shoulder, and the shape of the eaves 7 may also be changed by the customer's processing. Here, in FIG. 3, although the support portion 10 and are illustrated with a simple two incisions slits, but any shape may be used as long as it may be made into a shape that curves inward. In addition, it is also possible to separately arrange a member having a shape protruding inward, and various methods can be considered. Therefore, the support portion 10 and the body contact portion 6 may be integrated.

[0071] The body contact portion 6 is to be contacted with the head, and FIGS. 1A and 1B illustrate an example in which both ends of the body contact portion 6, which pinched and bulging out by the support portion 10 are in contact with the head and having a role that is linked to body movement due to the elasticity of the foam.

[0072] Therefore, the clothing contact portion 1 may be such as a basic rectangular or a deformed shape, and also the shape of come-into-touched part shoulder vicinity 4 is not limited to FIG.3, and can be changed in various ways based on the purpose of the present invention, and are not excluded from the present invention.

[0073] FIG. 4A illustrates an A-A' cross-sectional view and FIG. 4B illustrates a right-side view, which are Embodiment 3 of the present invention, the body contact portion 6 located on the left and right sides of the head, with come-into-touched part. Partially comprised a substantially inverted U-shaped clothing contact portion 1 except for the rear of the head hood, with the support portion 10, the body contact portion 6, and the come-into-touched part shoulder vicinity 4. The terminal part 12 being at the end of the come-into-touched part shoulder vicinity 4, which use being bent a notch at the hood boundary incision reference line 5, in order to be shaped along the shoulder. This is an example made curving a plate-like object in which the contact surface 13 is located vicinity both ends of the body contact portion 6 corresponding to the front and rear of each left and right head side and is supported at four points.

[0074] This signifies that the cross-sectional shape of the clothing contact portion 1 and the body contact portion 6 at the time of wearing is configured to be sandwiched between the clothing or the like 9 and the head as the part of the body, indicating by one-dotted chain line, by the action of one or both of the clothing or the like 9 and the part of the body.

[0075] The contact surface 13 in the right-side view of FIG. 4B is illustrated in the vicinity of two places before and after the head side of the body contact portion 6 by a dashed line arrow. If it is a soft material, it may use without incision at the hood boundary incision reference line 5, not limited to FIGS. 4A and 4B, can be changed in various ways based on the purpose of the present invention, and is not excluded from the present invention.

[0076] In the right-side view FIG. 4B, the body contact portions 6 located on the left and right is fixed by the support portion 10 inwardly curved, and pinched in the middle part of the body contact portion 6 being visible on the outside, and both ends of the bulging body contact portion 6 of non-pinched in the head side are support without other contacts by partial contact with the head, and the entire opening is retained. The hidden line of the support portion 10 is indicated by a dashed line, and is displayed with one-dotted chain line as an example of the position of the head when worn. The position of the hood boundary incision reference line 5 and the 14 are described with arrows. The space for air to pass 14 is more than 10 mm apart from contact of the part of the body or more, and if it is 30 mm to 50 mm, it is a preferred distance apart for better air flow.

[0077] The clothing contact portion 1 may be used simply in which contact the head along the clothing or the like 9, or it may be put on and take off, and the options for manufacturing and

selling in various patterns are expanded according to the customer's needs. FIGS. 4A and 4B illustrate an example of a figure having the same shape and size from the vicinity of the face opening side 2 to the vicinity of hood rear 3, but the clothing contact portion 1 is if in the case of the material easy to process, including it matches the size of the hood, or make close contact with hood the vicinity of the face opening side 2 only and the vicinity of hood rear 3 becomes possible to change the size, since become possible to change the shape by processing of customer, it is not limited to FIGS. 4A and 4B, and can be changed in various ways based on the purpose of the present invention. It is not excluded from the present invention.

[0078] Furthermore, In FIGS. 4A and 4B, as the body contact portion 6, the support portion 10 is signified in a simple shape with two slits and curved inward, but any shape can be used as long as it is a protruding shape inward. Any method may be used to fix the body contact portion 6, but in which sandwich a harder soft polyurethane foam and other things, for example, into the inward curved part, the part of the body contact portion 6 that reduces the feeling of pressure can be constituted. When a separate body contact portion 6 is provided for the purpose of integrated use with the clothing contact portion 1, any shape, method, and material can be used, but for example, a harder soft polyurethane foam may be capable of using such as bonding it to a preferred position. Further, the position of the body contact portion 6 is not limited to FIGS. 4A and 4B, and can be changed in various ways based on the purpose of the present invention, and is not excluded from the present invention.

[0079] If the material can be easily cut, it can be cut according to the size of the hood that the customer has, and the incision in the hood boundary incision reference line 5 may be cut and bent so that the come-into-touched part shoulder vicinity 4 follows the shape of the shoulder, and the shape of the eaves 7 may also be changed by the customer's processing. Therefore, the clothing contact portion 1 may be a basic rectangular or a deformed shape, and the come-into-touched part shoulder vicinity 4 shape is not limited to FIGS. 4A and 4B, and can be changed in various ways based on the purpose of the present invention, and are not excluded from the present invention.

[0080] FIG. 5A is a perspective view with a body position fixing tool in Embodiment 3 of the present invention, FIG. 5B is a perspective view with the clothing or the like 9 in between. An example, the clothing contact portion 1 that supports the hood, in which having a shape with the eaves 7, the support portion 10, the body contact portion 6, the terminal part 12 is located at the end of the come-into-touched part shoulder vicinity 4, bending the both ends of the clothing contact portion 1 towards shoulder in the position of the hood boundary incision reference line 5, and attaching the body position fixing tool 8 through the arm to the come-into-touched part shoulder vicinity 4, is illustrated.

[0081] As a way of using, it may be manufactured and sold in various patterns selected according to customer needs, such as using it without fixing it and just so as to touch the head along the clothing or the like 9, attaching it directly to the clothing or the like 9, and making it detachable. This is an example of being capable of preventing displacement, such as when you want to wear it firmly and respond to strong winds.

[0082] The body position fixing tool 8 is preferable, for example, such as belt-shaped TPU, rubber, but is not limited to the belt shape and can be changed in various ways based on the purpose of the body position fixing tool 8, and the shape is not limited to FIGS. 5A and 5B. In this example, the spacer may be attached when it's necessary without directly attaching the clothing contact portion 1 to the clothing or the like 9, such as gluing the spacer to the hood, and it is effective for use in an environment where it is easy to shift such as when the wind is strong.

[0083] FIGS. 5A and 5B illustrate a figure has the same shape and size from the vicinity of the face opening side 2 to the vicinity of hood rear 3, but including the clothing contact portion 1 matches the size of the hood or deformed, for example, making close contact with hood the vicinity of the face opening side 2 only, and the vicinity of hood rear 3 becomes possible to change the size, to use shape changeable materials so as to process of customer, and also, the method of attaching the body

position fixing tool **8**, the position of the body contact portion **6**, it is not limited to FIGS. 5A and 5B and can be changed in various ways based on the purpose of the present invention, it is not excluded from the present invention.

[0084] Further, although a rectangular shape without the eaves **7** is also possible in a perspective view of the embodiment **3**, in which the body position fixing tool **8** is used as handles to hold clothing or the like **9**, which is sandwiched therebetween, FIGS. 5A and 5B illustrate a shape with the eaves **7** as an example.

[0085] This is an example when the clothing or the like **9** is no longer needed, the clothing or the like **9** can be sandwiched between the spacer and carried so that it does not become bulky. If there is the body position fixing tool **8**, it will be easier to hold and more convenient. If it is rain gear, the wet side can be turned inside out, so it prevents the surroundings from getting wet, and it can also be hung with the body position fixing tool **8** when not in use.

[0086] The body position fixing tool **8** is preferable, for example, a belt-shaped TPU, rubber, or the like, but is not limited to a belt-shaped and can be changed in various ways based on the purpose of the body position fixing tool **8**. Further, it is an example that as the support portion **10**, inner curvature returns of the area with the two slits, and remove the body contact portion **6**. And such as according to the shape of the body contact portion **6** may detachable, or it may be folded, or change direction by rotate, various configurations can be envisaged the method including attachment of the body position fixing tool **8**, it is not limited to FIGS. 5A and 5B, also the shape and position, and can be changed in various ways based on the purpose of the present invention, it is not excluded from the present invention.

[0087] FIGS. 6A and 6B illustrate an Embodiment **4** of the present invention, FIG. 6A illustrates a rear view of the spacer with a substantially inverted V-shaped clothing contact portion **1** in which the body contact portion **6** is located behind the head. An example in which the clothing contact portion **1** that supports a hood in which the body contact portion **6** is located behind the head, has a curved support portion **10** and the body contact portion **6**, the support portion **10** is connected to the clothing contact portion **1** to fix the body contact portion **6**, and all the body contact portion **6** that fixes to the head from behind is in contact with the part of the body.

[0088] The shape of the head has individual differences, and this is an example when the shape of the body contact portion **6** matches the shape of the body. The dashed line indicates the left and right lines where the body contact portion **6** is fixed from behind the head toward the inside of the clothing contact portion **1** and hidden by the support portion **10**. The clothing contact portion **1** is shaped along the hood from the vicinity of the face opening side **2** to the vicinity of hood rear **3**.

[0089] Although not described in the figure, when viewed in the B-B' section of the plan view of FIG. 6B, the cross-section of the clothing contact portion **1** and the body contact portion **6** between the clothing or the like **9** and the body, is sandwiched structure by the action of either or both of the head of the body and the clothing or the like **9** upon mounting. The head of the body and the clothing or the like **9** indicate by one-dot chain line.

[0090] The material may be any, but preferably made of resin, and the clothing contact portion **1** is such as LDPE, PP, and PET, for example, may be considered, but it is a material that is touched by hand, it may be flexible, without burrs, and not too hard, and the thickness is 0.05 mm to 1 mm. The support portion **10** are preferably thickened to some extent by, for example, 1 mm or more to have strength.

[0091] In FIGS. 6A and 6B, an example of a figure illustrates in which the clothing contact portion **1** corresponding to the top of the head has substantially inverted V-shaped, so that easy folding at the top with a folded line. Although the same shape and size are illustrated from the vicinity of the face opening side **2** to the vicinity of hood rear **3**, but the clothing contact portion **1** may be substantially inverted U-shaped or any shape may be acceptable as long as it may be along to the hood, it is not limited to FIGS. 6A and 6B and can be changed in various ways based on the purpose of the present invention, it is not excluded from the present invention.

[0092] The position of the support portion **10** is illustrated in the vicinity of the upper part of the ear, but the connecting part of the clothing contact portion **1** may be detachable so that it can be changed to the customer's favorite position, and any position may be where the body contact portion **6** can contact with the part of the body. Various methods can also be envisaged to connect the support portion **10** to the clothing contact portion **1**, not limited curved shape of the support portion **10** and the body contact portion **6**, can be changed in various ways based on the purpose of the present invention, it is not excluded from the present invention. Furthermore, as illustrated in FIGS. **4A** and **4B**, the come-into-touched part shoulder vicinity **4** can be provided.

[0093] FIG. **7A** is a front view of the present invention that the body contact portion **6** being on the back side of the hand such as a cuff, FIG. **7B** is A-A cross-sectional view, and FIG. **7C** is B-B cross-sectional view illustrating Embodiment **4**. This is an example of the clothing contact portion **1** partially provided from the back side of the hand, and the body contact portion **6** is inserted into and fixed by the support portion **10**, and both ends of the bulging body contact portion **6** of non-pinched are supported without other contacts by partial contact with the back side of the hand and a part of the arm, and the entire opening is retained. The hidden line of the support portion **10** is indicated by a dashed line and as an example of the clothing or the like **9** covered on the clothing contact portion **1** indicated as a one-dotted chain line. This is an example in which wind flow enters by the space for air to pass **14** at the top of the back side of the hand, air flow from the vent is improved, it can be stably maintained since two contact surfaces **13** are exist, since interlock with each movement of the back side of the hand and the arm, the space for air to pass **14** can be ensured interlocking between the body and the clothing or the like **9**.

[0094] The arrangement location is not limited to the back side of the hand, it is sufficient if it constitutes the role of a spacer that may keep the space for air to pass **14** in the vent, and any material suitable that can hold the vent and contact with the part of the body. Therefore, various modifications can be made based on the gist of the present invention, such as a bending plate-like suitable for contact into a net-like shape, perforated by punching or the like, and including a substantially three-dimensional shape with various kinds of processing, and the distance to **9** can be adjusted by the height and position of the body contact portion **6**, and so on, the spacer can be changed in various ways based on the purpose of the present invention, it is not excluded from the present invention.

[0095] The material of the body contact portion **6** is preferably comprised of a material capable of holding the vent when the shape of the spacer is changed by the movement of the hand, such as urethane or polyethylene and so on with light and flexible. By the shape of the spacer changes due to the movement of the hand, that is, it is expected to have the effect of sending in the wind from the opening to the inside direction. It is not limited to the cuff or the like illustrated in FIGS. **7A** to **7C**, such as bonding, detaching, or partially fixing to the clothing or the like **9**, but the present invention spacer may be used any area where the spacer is capable of being arranged, such as become a vent in which both the one side of the clothing or the like **9** and on the other side are released allowing air to flow any area, and can be changed in various ways based on the purpose of the present invention, it is not excluded from the present invention.

[0096] Further, the clothing contact portion **1** may be consisted as a separate body or integrated, including, for example, the case of such as non-slip silicone material coating, that is already providing with the clothing, can be configured by preprocessed into the clothing or the like **9**, fixing like a hook-and-loop fastener and other things, and can be changed in various ways, it is not excluded from the present invention.

[0097] Describe the clothing or the like **9** having the spacer of the present invention. The spacer is provided as a part of the clothing or the like **9**, such as being fixed to the clothing or the like **9** at the time of sale, or the clothing contact portion **1** and the body contact portions **6** are possibly integrated with such as a 3D printer and other things, it refers that is molded in one piece clothing or the like **9** with the clothing contact portion **1** and the body contact portion **6**. Therefore, as a

diagram of the embodiment, the shapes illustrated in FIGS. 1 to 7 are provided as part of the clothing or the like 9 or integrally molded as a part of the clothing or the like 9, all of them means using integrally as the spacer of present invention, any methods and materials can be changed, in addition, the size, shape and position of the clothing contact portion 1, the body contact portion 6, and the support portion 10 are not limited to FIGS. 1 to 7, and can be changed in various ways based on the purpose of the present invention, and are not excluded from the present invention. [0098] Thus, the present invention is the spacer that encourages continuous air flow in shape like never before, has low adhesion to the part of the body, and the air breathability is significantly improved, the effect is noticeable during windy and rainy conditions in hot and humid seasons. Additionally, the space for air to pass 14 around the body prevents clinging to the body such as the head and arms, and has the feature of being capable of using comfortably.

[0099] In addition, when the size of the spacer that supports the hood is large enough to hold the clothing or the like 9, it can be used as a substitute for case by turning it inside out, and it is convenient to use it without getting the surroundings wet when carrying. It is not a complicated structure, and it can be manufactured with inexpensive materials, so distribution to the market can be expected.

[0100] Furthermore, if a vent is attached to the clothing hood, the hood will not be blown off in the situation exposing the wind entering such as watching sports, and combines industrial availability as comfortable product that is not directly affected using with the clothing or the like 9, in environments in which it is struck by rain for a long time.

REFERENCE SIGNS LIST

[0101] 1 Clothing contact portion [0102] 2 Face opening side [0103] 3 Hood rear [0104] 4 Come-into-touched part shoulder vicinity [0105] 5 Hood boundary incision reference line [0106] 6 Body contact portion [0107] 7 Eaves [0108] 8 Body position fixing tool [0109] 9 Clothing or the like [0110] 10 Support portion [0111] 11 Vicinity the top of the head [0112] 12 Terminal part [0113] 13 Contact surface [0114] 14 Space for air to pass

Claims

1. A spacer for use in a clothing, the spacer comprising: a clothing contact portion being provided partially at least; a body contact portion protruding to a body side on the other side, the body contact portion supporting the clothing contact portion partially with low adhesion, without supporting exist on all over, the clothing contact portion and the body contact portion being arranged to have a space for air to pass between the clothing and the body, keeping a shape of wind flow enters by the body contact portion, in a space having a distance apart between each contact surfaces of single or a plurality of the body contact portion, keeping a space with the body corresponding to different shape angles depending on a body parts, by the space for air to pass for encourage air flow, preventing contact between the clothing and the body.
