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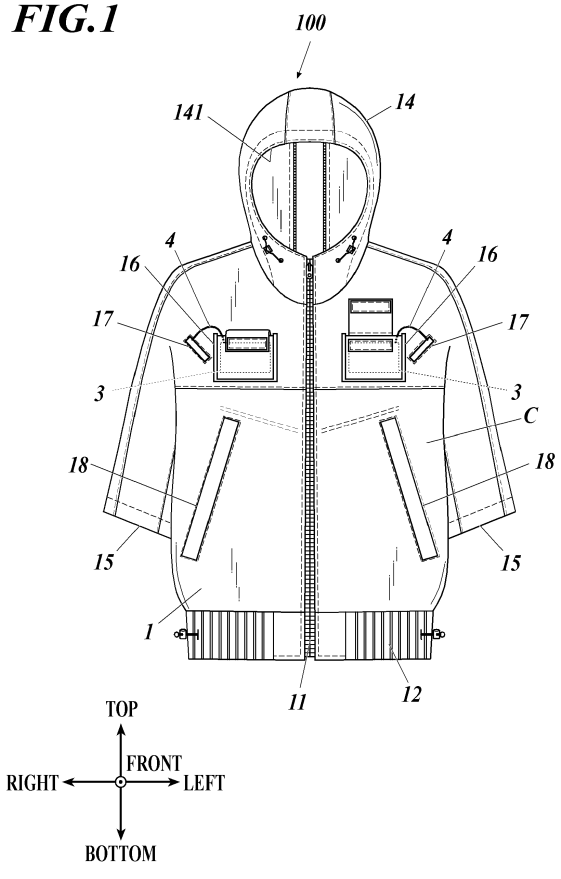
(54) GARMENT AND AIR-CONDITIONED GARMENT

(57) A garment includes a garment cloth (C) , an opening and an absorber. The garment cloth covers at least a portion of a body of a wearer. The opening is formed in the garment cloth. The absorber is disposed around the opening on an inner side of the garment and is more absorbent than the garment cloth.

FIG.1



EP 3 841 900 A1

Description

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0001] The present invention relates to a garment and an air-conditioned garment.

2. Description of Related Art

[0002] In long-term exercise, it is important to cool a body before, during and/or after exercise in preparation for a rise in body temperature. Cooling a body is important because even short-term exercise may increase body temperature depending on a type and contents of exercise.

[0003] A known garment improves a function to cool a body of a wearer during and/or after exercise by increasing ventilation, etc. (e.g., Japanese Patent No. 6030812).

[0004] A known air-conditioned garment comprises, as auxiliary equipment that effectively serves to cool a body by heat of vaporization of sweat:

a garment body made by sewing fabric having low ventilation;
a fan mounted at a lower portion of the garment body on a back side;
a power supply that supplies power to the fan; and
a power cable that electrically connects the power supply and the fan.

[0005] When the fan is operated, a large amount of air is taken into the garment body from the fan. The taken air flows upward along a surface of a body or an underwear in space between the garment body and the body or the underwear. The air is discharged outside from the periphery of a collar and sleeves, for example. The air vaporizes sweat on the body while flowing in the space between the garment body and the body or the underwear. Heat of vaporization generated by vaporizing sweat cools the body (e.g., Japanese Patent No. 4329118).

[0006] Another air-conditioned garment is provided with an air outlet for a belly to cool not only a chest, a back, etc., but also the belly (e.g., Japanese Patent No. 6536674) .

[0007] During and/or after exercise, hands and surrounding portions sweat. It is desirable that sweat is wiped off quickly because hand sweat affects sports such as tennis. Excess sweat prevents vaporization and a decline in body temperature. Hand vessels, called arteriovenous anastomoses, are said to bring a decline in body temperature.

[0008] However, in a case in which a garment is made of absorbent cloth, the cloth is so thick that heat tends to stay inside. It often impairs a function to cool a wearer's body. Thus, many of garment fabrics to be worn during and/or after exercise are less absorbent. It is difficult for a wearer to wipe hand sweat sufficiently. The air-conditioned garment utilizing the function of heat of vaporization of sweat for cooling a body cools a chest, a back, a belly, etc. However, it cannot cool hands of a wearer and cannot wipe hand sweat sufficiently.

SUMMARY OF THE INVENTION

[0009] An object of the present invention is to provide a garment and an air-conditioned garment which cool hands of a wearer and which easily wipe hand sweat.

[0010] To achieve at least one of the abovementioned objects, according to an aspect of the present invention, a garment includes:

a garment cloth that covers at least a portion of a body of a wearer;
an opening formed in the garment cloth; and
an absorber which is disposed around the opening on an inner side of the garment and which is more absorbent than the garment cloth.

[0011] Preferably, the opening is provided on each of left and right sides in a front of the garment.

[0012] Preferably, the garment further includes:

an envelope member having a shape of an envelope, wherein
one end of the envelope member is attached to the garment cloth around the opening on the inner side of the garment, and
the absorber is provided on an inner surface of the envelope member.

[0013] Preferably, the envelope member comprises a first sheet and a second sheet each having a substantially square shape,
edges of the first sheet and the second sheet are joined on two opposite sides, and
other edges of the first sheet and the second sheet on a side other than the two opposite sides are attached to the garment cloth around the opening on the inner side of the garment.

[0014] Preferably, the joined edges of the first sheet and the second sheet on one of the two opposite sides are attached to the garment cloth on the inner side of the garment.

[0015] Preferably, the garment cloth forms a sleeve,
the opening is provided at an end of the sleeve, and
the absorber is provided around the end of the sleeve.

[0016] Preferably, the sleeve is long enough to cover substantially an entire hand of the wearer of the garment.

[0017] Preferably, the garment further includes:

a mount hole in which a ventilator is mounted; and
an air outlet that discharges air introduced by the ventilator mounted in the mount hole.

[0018] According to another aspect of the present invention, an air-conditioned garment includes:

the garment;
the ventilator mounted in the mount hole; and
a power source that provides power to the ventilator.

[0019] According to still another aspect of the present invention, an air-conditioned garment includes:

a garment that includes:

a garment cloth that covers at least a portion of a body of a wearer; and
a mount hole;

a ventilator mounted in the mount hole;
a power source that provides power to the ventilator; and
an opening which is formed in the garment cloth on an outer side of the garment and which extends to an inner side of the garment.

[0020] The present invention provides a garment and an air-conditioned garment which cool hands of a wearer and which easily wipe hand sweat.

BRIEF DESCRIPTION OF THE DRAWINGS

[0021] The advantages and features provided by one or more embodiments of the invention will become more fully understood from the detailed description given hereinbelow and the appended drawings which are given by way of illustration only, and thus are not intended as a definition of the limits of the present invention.

FIG. 1 is a front view of an air-conditioned garment according to a first embodiment with a fastener closed.
FIG. 2 is a back view of the air-conditioned garment according to the first embodiment with the fastener closed.
FIG. 3 is a front view of the air-conditioned garment according to the first embodiment with the fastener opened.
FIG. 4 is a front view of the air-conditioned garment according to a second embodiment with the fastener closed.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0022] Hereinafter, embodiments of the present invention will be described with reference to FIG. 1 to FIG. 4. However, the scope of the invention is not limited to the disclosed embodiments. In the following, as a suitable example of the present invention, a case in which a garment is an air-conditioned garment is described using figures. However, the scope of the claims of the present invention is not limited thereto. The embodiments described below can be modified in various ways within the scope of the claims of the present invention.

[0023] In the following description, front, back, top, bottom, right and left sides respectively correspond to those of a person wearing an air-conditioned garment 100.

FIRST EMBODIMENT

[0024] A first embodiment of the present invention is described with reference to FIG. 1 to FIG. 3.

1) Configuration of Embodiment

[0025] As shown in FIG. 1 to FIG. 3, the air-conditioned garment 100 according to the first embodiment includes:

a garment body 1;
a fan 2 that introduces air into the garment body 1;
a power source 3 that supplies power to the fan 2; and
a connection cable 4 that connects the power source 3 and the fan 2.

[0026] The air-conditioned garment 100 allows air taken by the fan 2 into space between the garment body 1 and a wearer's body to flow along a surface of the wearer's body or an underwear. Thereby, the air-conditioned garment 100 vaporizes sweat on the body. Heat of vaporization generated by vaporizing sweat cools the body.

I) Garment Body

[0027] As shown in FIG. 1 to FIG. 3, a garment cloth C forms the garment body 1 in a shape that covers a trunk, arms and a head of a wearer. The garment cloth C does not breathe or is breathable to the extent that the garment cloth C is inflated by introduction of air through the fan 2. The garment cloth C is made of, for example, polyester, a mix of polyester and cotton, nylon, or the like.

[0028] The garment body is a portion of the air-conditioned garment 100 excluding electrical components such as the fan 2, the power source 3, the connection cable 4, etc., i.e., a portion having a function of a garment. The garment cloth is a portion of a sheet that constitutes the garment, the portion covering a wearer's body and defining a shape of the garment. The portion does not include additional parts that do not define the shape of the garment, such as a sheet used for a pocket.

[0029] In FIG. 1 to FIG. 3, the garment body 1 has a shape of a jacket having three-quarter sleeves. A shape of the garment body 1 is not limited thereto. The garment body 1 may have any shape that covers at least a portion of a wearer's body. For example, the garment body 1 may not include a hood 14 that covers a head, and may have long sleeves or short sleeves. Alternatively, the garment body 1 may be a sleeveless vest.

[0030] In the following explanation, an inner surface of

the garment cloth C is a surface facing a person when the person wears the garment body 1. An outer surface of the garment cloth C is a surface facing outer space when a person wears the garment body 1, which is opposite to the inner surface. When a person wears the garment body 1, the inner surface of the garment cloth C as well as portions on a side of the person is on an inner side of the garment body 1. When a person wears the garment body 1, the outer surface of the garment cloth C as well as portions outside of the garment cloth C is on an outer side of the garment body 1.

[0031] As shown in FIG. 1 to FIG. 3, the garment body 1 includes a fastener 11, an air seal 12, fan holes 13, the hood 14, sleeve openings 15, power source holders 16, cable eyelets 17, front openings 18, envelope members 19, and absorbers 20. Air taken in by the fan 2 from the fan holes 13 is discharged from the sleeve openings 15 and a hood opening 141 formed in the hood 14.

i) Fastener

[0032] The fastener 11 opens and closes a front of the garment body 1 when the air-conditioned garment 100 is put on. As shown in FIG. 1 and FIG. 3, the front of the garment body 1 is divided into left and right portions. For example, a zipper, a hook-and-loop fastener or the like is mounted on each edges of the divided portion so that the divided portion is opened and closed. Thus, the fastener 11 is formed.

ii) Air Seal

[0033] As shown in FIG. 1 to FIG. 3, the air seal 12 squeezes a hem at the bottom of the garment body 1 so that the hem adheres to a wearer's body. Thus, the air seal 12 prevents air in space between the garment body 1 and the wearer's body from being leaked out of the hem of the garment body 1.

[0034] In FIG. 1 to FIG. 3, the hem of the garment body 1 includes, as the air seal 12:

a cord guide around a wearer's body except a portion near the fastener 11;
a cord passed through the cord guide; and
a cord stopper provided at a portion of the cord coming of the cord guide.

[0035] The portion of the cord coming out of the cord guide is pulled, and then the cord stopper is fixed. Thus, the hem of the garment body 1 adheres to a wearer's body. However, the air seal 12 is not limited thereto. For example, the air seal 12 may be formed at the hem of the garment body 1 by wrapping an elastic member, such as a rubber cord, around a wearer's body.

iii) Fan Hole

[0036] As shown in FIG. 2 and FIG. 3, the fan hole 13 is a circular hole formed in a back of the garment cloth C constituting the garment body 1. The fan hole 13 connects space between the garment body 1 and a wearer's body with outer space of the garment body 1 when the air-conditioned garment 100 is worn.

[0037] A diameter of the fan hole 13 is substantially the same as that of the fan 2. The fan 2 is inserted and mounted in the fan hole 13. External air is taken through the fan hole 13 into the space between the garment body 1 and the wearer's body.

[0038] The periphery of the fan hole 13 is preferably reinforced, for example, by attaching a flat annular member made of plastic or the like, or by folding back and sewing a portion of the cloth of the garment body 1 around the fan hole 13.

[0039] A position of the fan hole 13 is not limited to the above. The fan hole 13 may be formed on a lateral side, the front side, etc. of the garment body 1. The number of the fan holes 13 is not limited to two, and may be less or more. The number of the fans 2 to be mounted corresponds to the number of the fan holes 13.

iv) Hood

[0040] The hood 14 protrudes from the top of the garment body 1 to cover a head of a wearer. The hood 14 has the hood opening 141 at a front position corresponding to a face of a wearer. Sufficient space is saved even when a wearer wears a hat. A cord guide is provided around the hood opening 141. A cord passes through the cord guide. A length of a portion where the cord passes through the cord guide is adjusted using a cord stopper or the like. Thus, a size of the hood opening 141 is changed.

v) Sleeve Opening

[0041] The sleeve opening 15 is an opening formed at the end of the sleeve of the garment body 1. A wearer passes a hand through the sleeve opening 15 to let the hand out of the garment body 1.

[0042] In the embodiment, the sleeve opening 15 and the hood opening 141 function as air outlets. The air outlets allows air introduced into space between the garment body 1 and a wearer's body from the fan hole 13 by the fan 2 to flow along the wearer's body or an underwear and to go out. A position of the air outlet is not limited thereto. The air outlet may be formed at any other position as long as the air outlet allows air introduced from the fan hole 13 to flow along a wearer's body or an underwear and to go out.

vi) Power Source Holder

[0043] The power source holder 16 holds the power source 3 at a position where the power source 3 can supply power to the fan 2 through the connection cable 4. As shown in FIG. 1, the power source holder 16 may

be a pocket that accommodates the power source 3 on the outer side of the garment body 1. In FIG. 1, the power source holder 16 is formed at each of left and right positions in front of a chest of a wearer. However, a position of the power source holder 16 is not limited thereto. The power source holder 16 may be placed at any other position on the inner and outer sides of the garment as long as the power source 3 can supply power to the fan 2 through the connection cable 4.

[0044] In a case in which the power source 3 is on the outer side of the garment, a hole (not shown) is formed so that the connection cable 4 connecting the power source 3 and the fan 2 passes through the hole.

vii) Cable Eyelet

[0045] As shown in FIG. 1 and FIG. 3, the cable eyelet 17 is a slit which is formed in the garment cloth C to draw the connection cable 4 connecting the power source 3 and the fan 2 from the outer side to the inner side of the garment body 1. The cable eyelet 17 is formed in the vicinity of each power source holder 16. A position of the cable eyelet 17 is not limited to the positions shown in FIG. 1 and FIG. 3. However, to shorten a portion of the connection cable 4 coming out of the garment body 1, the cable eyelet 17 should be formed near the power source holder 16.

[0046] It is preferable to form piping at each edge of the slit as the cable eyelet 17 such that piping at one edge overlaps with piping at the other edge. It prevents air leakage from the cable eyelet 17.

viii) Front Opening

[0047] As shown in FIG. 1, the front opening 18 is a slit formed in the garment cloth C in the front of the garment body 1. The front opening 18 is formed on each of left and right sides of the fastener 11.

[0048] A wearer inserts a hand through the front opening 18 from the outer side to the inner side of the garment body 1. In view of this, the front opening 18 is formed at a portion which a wearer's hand can reach in the front of the garment body 1. The front opening 18 is large enough to pass a wearer's hand through the front opening 18. It is preferable to form piping also at each edge of the slit as the front opening 18 such that piping at one edge overlaps with piping at the other edge. It prevents air leakage from the front opening 18.

ix) Envelope Member

[0049] As shown in FIG. 3, the envelope member 19 is formed to have a shape of an envelope by overlapping two substantially square-shaped sheets, joining the sheet edges on two opposite sides, and forming an opening on the other two opposite sides. The envelope member 19 is attached to the inner surface of the garment cloth C of the garment body 1.

[0050] As shown in FIG. 3, of the sheets forming the envelope member, one disposed on the side of the garment cloth C of the garment body 1 is the first sheet 191, and one disposed on the side of a wearer of the air-conditioned garment 100 is the second sheet 192. In the following explanation, a surface on the inner side of the envelope where the first sheet 191 and the second sheet 192 face with each other is an inner surface of the envelope member 19. The surface opposite to the inner surface, i.e., the surface on the outer side the envelope, is an outer surface of the envelope member 19.

[0051] The first sheet 191 and the second sheet 192 may be formed by piling two separate sheets and joining sheet edges by sewing or the like on two opposite sides. Alternatively, the first sheet 191 and the second sheet 192 may be formed by folding a single sheet and joining sheet edges by sewing or the like on the side opposite to the folded side.

[0052] One opening of the envelope member 19 is attached to the inner surface of the garment cloth C of the garment body 1 around the front opening 18 by sewing or the like. A wearer inserts a hand through the front opening 18 and the envelope member 19 into space between the garment body 1 and the wearer's body.

[0053] Specifically, the first sheet 191 and the second sheet 192 are respectively attached to the left and right edges of the slit as the front opening 18. Thus, the envelope member 19 is attached to the inner surface of the garment cloth C around the front opening 18.

[0054] As shown in FIG. 3, one of the two joined edges of the first sheet 191 and the second sheet 192 of the envelope member 19 (in FIG. 3, the upper edge of the envelope member 19) is attached to the inner surface of the garment cloth C of the garment body 1 by sewing or the like. In contrast, the other of the two joined edges of the first sheet 191 and the second sheet 192 (in FIG. 3, the lower edge of the envelope member 19) is not attached to the garment cloth C of the garment body 1. Thus, the lower portion of the envelope member 19 is separated from the garment cloth C of the garment body 1. In the example, the envelope member 19 has a shape of an envelope having an opening on each of two sides. Alternatively, the envelope member 19 may have a shape of a bag having an opening on only one side.

x) Absorber

[0055] The absorber 20 is a more absorbent sheet than the garment cloth C of the garment body 1. For example, it is pile fabric and is made of a mix of rayon and polyester, 100% cotton, a mix of cotton, polyester and polyurethane, or the like. As shown in FIG. 3, the absorber 20 covers the entire inner surface of the envelope member 19 and is disposed around the opening 18 on the inner side of the garment body 1.

[0056] To provide the absorber 20 to the garment body 1, the first sheet 191 and the second sheet 192 forming the envelope member 19 may be more absorbent than

the garment cloth C of the garment body 1. Alternatively, the first sheet 191 and the second sheet 192 of the same fabric as the garment cloth C of the garment body 1 may be used to form the envelope member 19. In this case, the absorber 20 is put on the inner surface of the envelope member 19.

[0057] In the former case, the first sheet 191 and the second sheet 192 of the envelope member 19 and the absorber 20 are the same. In this case, the absorber 20 is provided to the outer surface in addition to the inner surface of the envelope member 19. In the latter case, the first sheet 191 and the second sheet 192 of the envelope member 19 and the absorber 20 are separate. In this case, the absorber 20 is provided only to the inner surface of the envelope member 19.

[0058] The absorber 20 may be removable and attachable from/to the garment body 1. In this case, the absorber 20 can be replaced when it is stained.

II) Fan

[0059] As shown in FIG. 2 and FIG. 3, the fan 2 is inserted into the fan hole 13 to be attached to the garment body 1. The fan 2 introduces air through the fan hole 13 into space between the garment body 1 and a wearer's body. The power source 3 provides necessary power to the fan 2 through the connection cable 4.

[0060] The fan 2 may have any specific configuration as long as the fan 2 can be inserted into the fan hole 13 to be attached to the garment body 1 and can introduce air into space between the garment body 1 and a wearer's body,.

III) Power Source

[0061] The power source 3 is a member that supplies power to the fan 2. The power source 3 has, for example, a built-in lithium-ion batteries with a safety protection circuit. As shown in FIG. 1 and FIG. 3, the power source 3 is connected to the fan 2 through the connection cable 4. The power source 3 includes a switch (not shown) that turns on and off power supplied to the fan 2.

[0062] The power source 3 may have any specific configuration as long as the power source 3 can supply power to the fan 2.

IV) Connection Cable

[0063] As shown in FIG. 1 and FIG. 3, the connection cable 4 connects the power source 3 and the fan 2. The power source 3 supplies the fan 2 with power required to operate the fan 2 through the connection cable 4.

[0064] The connection cable 4 may have any specific configuration as long as the power source 3 can supply the fan 2 with power required to operate the fan 2.

2) Effect of Embodiment

[0065] The air-conditioned garment 100 according to the embodiment includes the absorber 20 which is more absorbent than the garment cloth C of the garment body 1 around the front opening 18 on the inner side of the garment body 1. When a wearer of the air-conditioned garment 100 inserts a hand from the front opening 18 to the inner side of the garment body 1, the absorber 20 wipes sweat on the hand.

[0066] The garment cloth C of the garment body 1 does not have to be the absorber 20. Any material can be used for the garment cloth C. Therefore, the absorber 20 does not prevent improvement in a function of cooling a wearer's body.

[0067] The absorber 20 is provided on the inner side of the garment body 1. When a wearer wears the garment body 1, the absorber 20 is not visible from the outside of the garment body 1. Therefore, the absorber 20 does not spoil appearance of the garment body 1.

[0068] The absorber 20 is provided to the envelope member 19 attached to the inner surface of the garment cloth C around the front opening 18. Therefore, when a wearer inserts a hand from the front opening 18 to the inner side of the garment body 1, the hand is easily wiped.

[0069] Of the two joined edges of the first sheet 191 and the second sheet 192 of the envelope member 19, the upper edge is attached to the inner surface of the garment cloth C of the garment body 1, and the lower edge is not attached to the inner surface of the garment cloth C of the garment body 1. Therefore, the bottom of the envelope member 19 is separated from the garment cloth C of the garment body 1. A wearer can more easily wipe a hand with the absorber 20. Since the upper edge is attached to the garment cloth C of the garment body 1, the envelope member 19 is prevented from being bent while the air-conditioned garment 100 is put on.

[0070] The fan 2 of the air-conditioned garment 100 takes air into space between the garment body 1 and a wearer's body and send air to air outlets (the hood opening 141 and the sleeve openings 15). It cools the wearer's body much more effectively as compared with a case in which a garment is improved only in ventilation.

[0071] The envelope member 19 extends from the front opening 18 into space between the garment body 1 and a wearer's body. The wearer of the air-conditioned garment 100 inserts a hand from the outside of the garment body 1 into the space between the garment body 1 and the wearer's body through the front opening 18 and the envelope member 19. Air introduced by the fan 2 into the space between the garment body 1 and the wearer's body cools the hand of the wearer, too.

SECOND EMBODIMENT

[0072] The second embodiment of the present invention is described based on Fig.4. Explanation is omitted for the same parts as the first embodiment.

1) Configuration of Embodiment

[0073] As shown in FIG. 4, the garment body 1A of the air-conditioned garment 100A according to the second embodiment has long sleeves, and includes the absorbers 20A on the inner side of the garment body 1 around the sleeve openings 15 formed at sleeve ends. The air-conditioned garment 100A differs from the garment body 1 of the air-conditioned garment 100 according to the first embodiment in that the front opening 18, the envelope members 19, and the absorbers 20 are not provided in the front. Other configurations are the same as the air-conditioned garment 100 according to the first embodiment.

[0074] As shown in FIG. 4, the sleeves of the garment body 1A are longer than long sleeves of a common jacket so as to cover substantially the entire hands of a wearer.

[0075] The absorbers 20A are put on the inner surface of the garment cloth C around the sleeve openings 15. Like the absorbers 20 according to the first embodiment, the absorber 20A is a more absorbent sheet than the garment cloth C of the garment body 1A. For example, it is pile fabric and is made of a mix of rayon and polyester, 100% cotton, a mix of cotton, polyester and polyurethane, or the like.

[0076] In the case shown in FIG. 4, the air-conditioned garment 100A differs from the garment body 1 of the air-conditioned garment 100 according to the first embodiment in that the front opening 18, the envelope members 19, and the absorbers 20 are not provided in the front. However, in addition to the absorbers 20A provided in the long sleeves, the air-conditioned garment 100A may be provided with the front opening 18, the envelope members 19, and the absorbers 20 in the front.

2) Effect of Embodiment

[0077] The air-conditioned garment 100A according to the present embodiment is provided with the absorbers 20A which are more absorbent than the garment cloth C of the garment body 1A around the sleeve openings 15. Therefore, a wearer of the air-conditioned garment 100A can wipe hand sweat with the absorber 20A.

[0078] The garment cloth C of the garment body 1A itself does not have to be the absorber 20A. Any material can be used for the garment cloth C. Therefore, the absorber 20A does not prevent improvement in a function of cooling a wearer's body.

[0079] The absorber 20A is provided on the inner side of the garment body 1A. When a wearer wears the garment body 1A, the absorber 20A is not visible from the outside of the garment body 1A. Therefore, the absorber 20A does not spoil appearance of the garment body 1A.

[0080] The fan 2 of the air-conditioned garment 100A takes air into space between the garment body 1A and a wearer's body and send air to air outlets (the hood opening 141 and the sleeve openings 15). It cools the wearer's body much more effectively as compared with a case in which a garment is improved only in ventilation.

[0081] The sleeves of the garment body 1A are longer than long sleeves of a common jacket so as to cover substantially the entire hands of a wearer. Air introduced by the fan 2 into the space between the garment body 1A and the wearer's body flows around the hands. The hands of the wearer are thus cooled down.

[0082] To apply the present invention to an air-conditioned garment, the absorber may be omitted in a case in which cooling hands is required but wiping hand sweat is not required.

[0083] Although embodiments of the present invention have been described and illustrated in detail, the disclosed embodiments are made for purposes of illustration and example only and not limitation. The scope of the present invention should be interpreted by terms of the appended claims.

Claims

1. A garment, comprising:

a garment cloth that covers at least a portion of a body of a wearer;
an opening formed in the garment cloth; and
an absorber which is disposed around the opening on an inner side of the garment and which is more absorbent than the garment cloth.

2. The garment according to claim 1, wherein the opening is provided on each of left and right sides in a front of the garment.

3. The garment according to claim 1 or 2, further comprising:

an envelope member having a shape of an envelope,
wherein
one end of the envelope member is attached to the garment cloth around the opening on the inner side of the garment, and
the absorber is provided on an inner surface of the envelope member.

4. The garment according to claim 3, wherein
the envelope member comprises a first sheet and a second sheet each having a substantially square shape,
edges of the first sheet and the second sheet are joined on two opposite sides, and
other edges of the first sheet and the second sheet on a side other than the two opposite sides are attached to the garment cloth around the opening on the inner side of the garment.

5. The garment according to claim 4, wherein

the joined edges of the first sheet and the second sheet on one of the two opposite sides are attached to the garment cloth on the inner side of the garment.

6. The garment according to any one of claims 1 to 5, wherein
the garment cloth forms a sleeve,
the opening is provided at an end of the sleeve, and
the absorber is provided around the end of the sleeve.

7. The garment according to claim 6, wherein the sleeve is long enough to cover substantially an entire hand of the wearer of the garment.

8. The garment according to any one of claims 1 to 7, further comprising:

a mount hole in which a ventilator is mounted; and
an air outlet that discharges air introduced by the ventilator mounted in the mount hole.

9. An air-conditioned garment, comprising:

the garment according to claim 8;
the ventilator mounted in the mount hole; and
a power source that provides power to the ventilator.

10. An air-conditioned garment, comprising:

a garment that comprises:

a garment cloth that covers at least a portion of a body of a wearer; and
a mount hole;

a ventilator mounted in the mount hole;
a power source that provides power to the ventilator; and
an opening which is formed in the garment cloth on an outer side of the garment and which extends to an inner side of the garment.

FIG.1

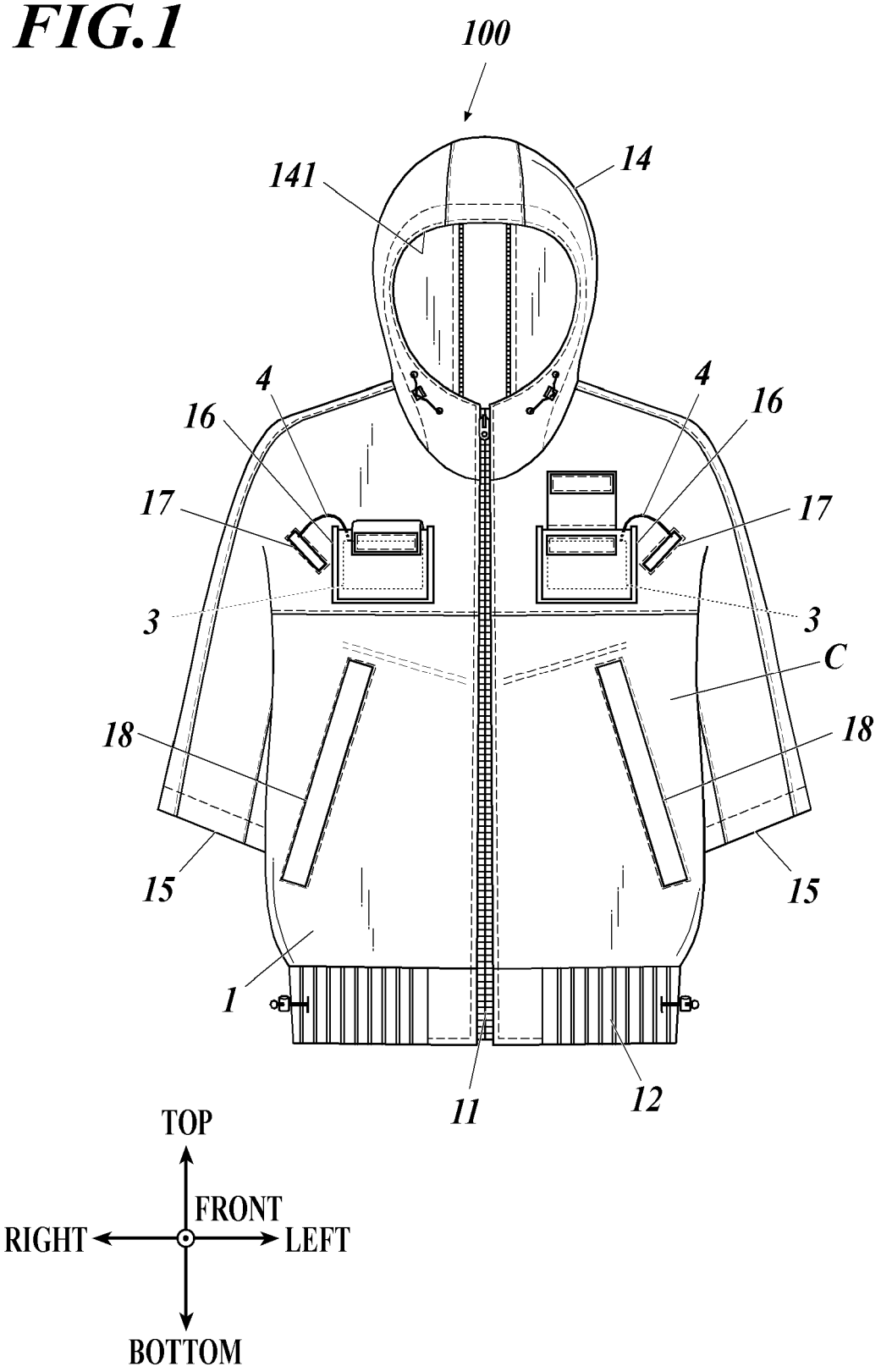

100
141
14
4
16
17
3
4
16
17
3
C
18
18
15
15
1
11
12
TOP
FRONT
RIGHT
LEFT
BOTTOM

FIG.2

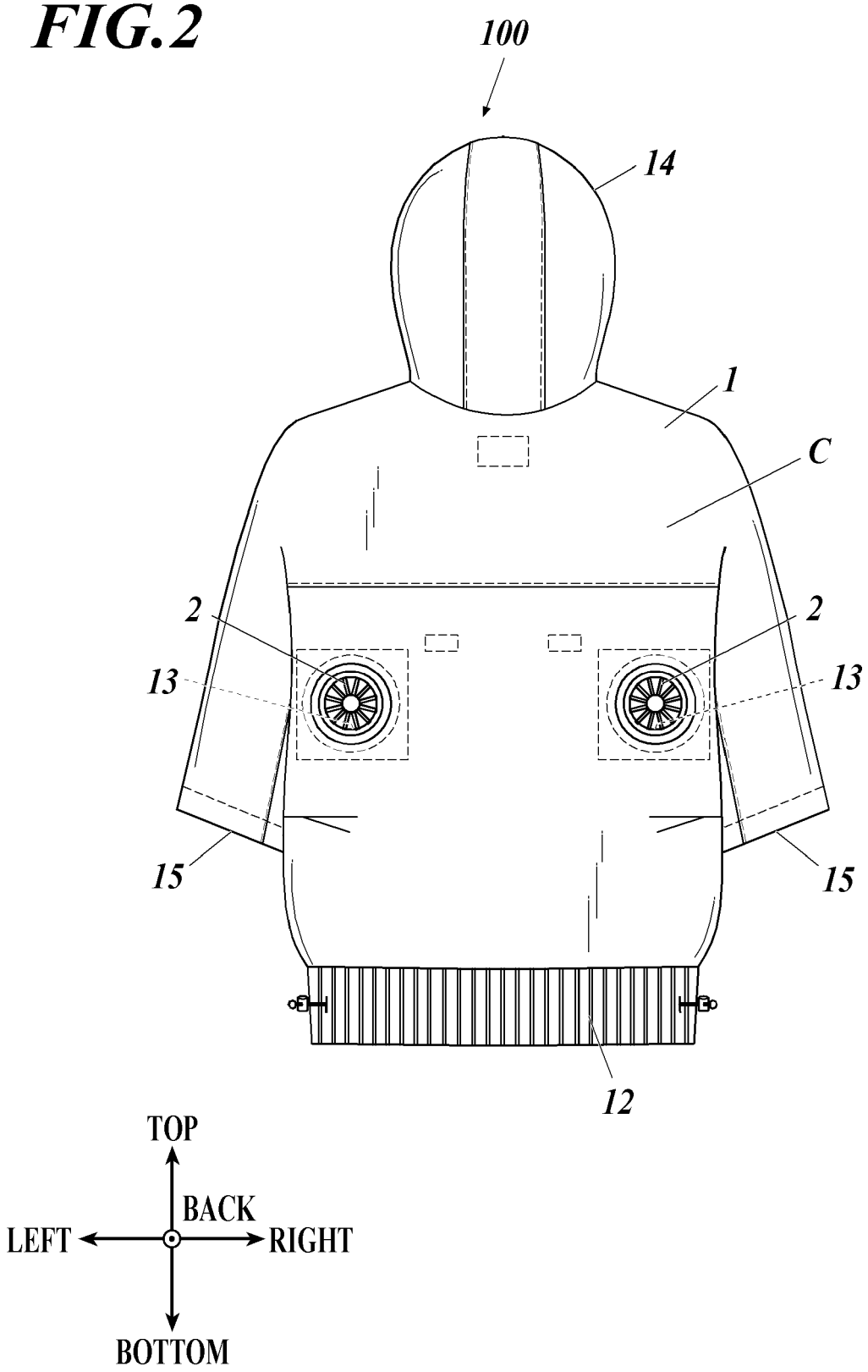


FIG.3

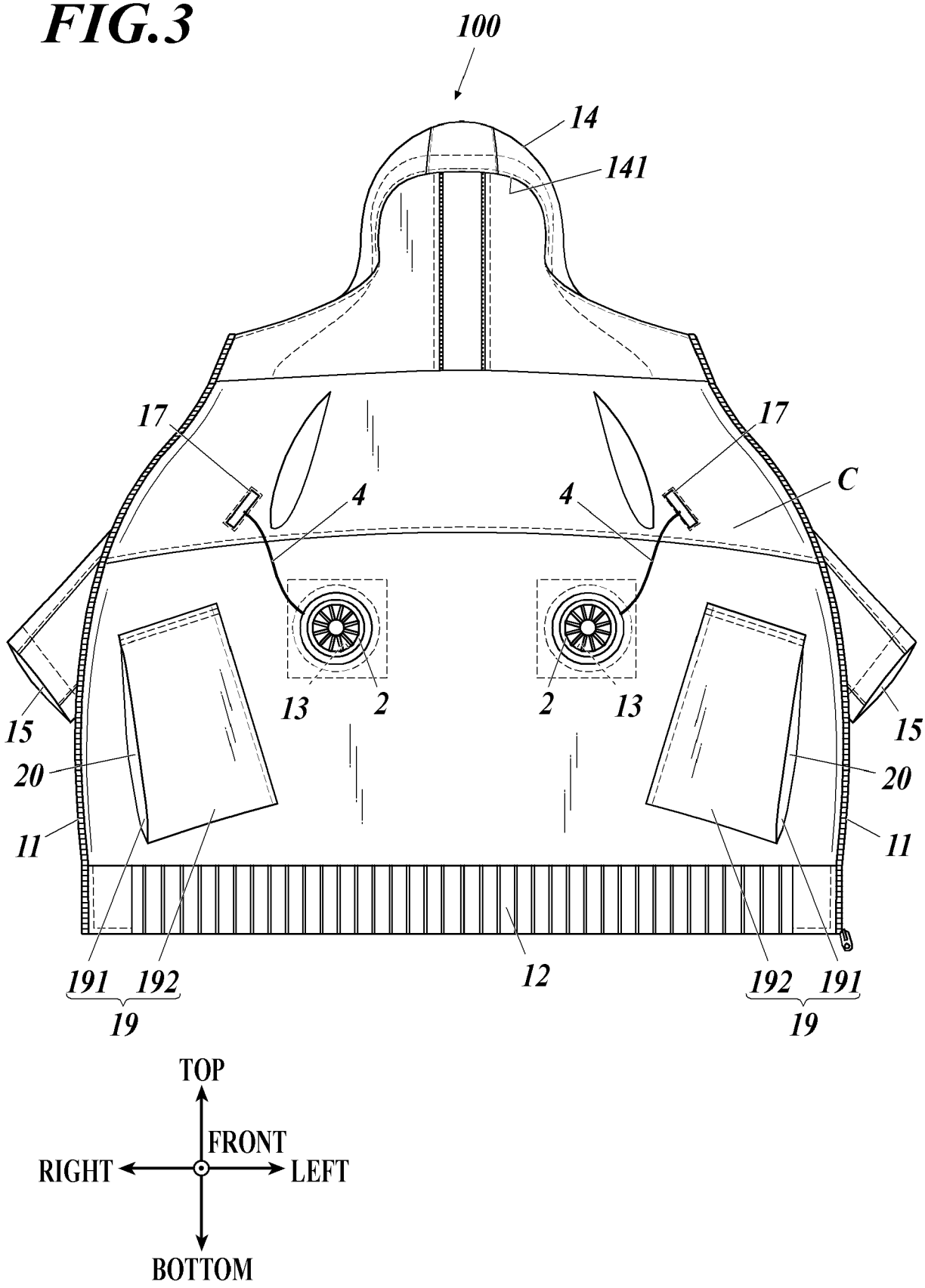
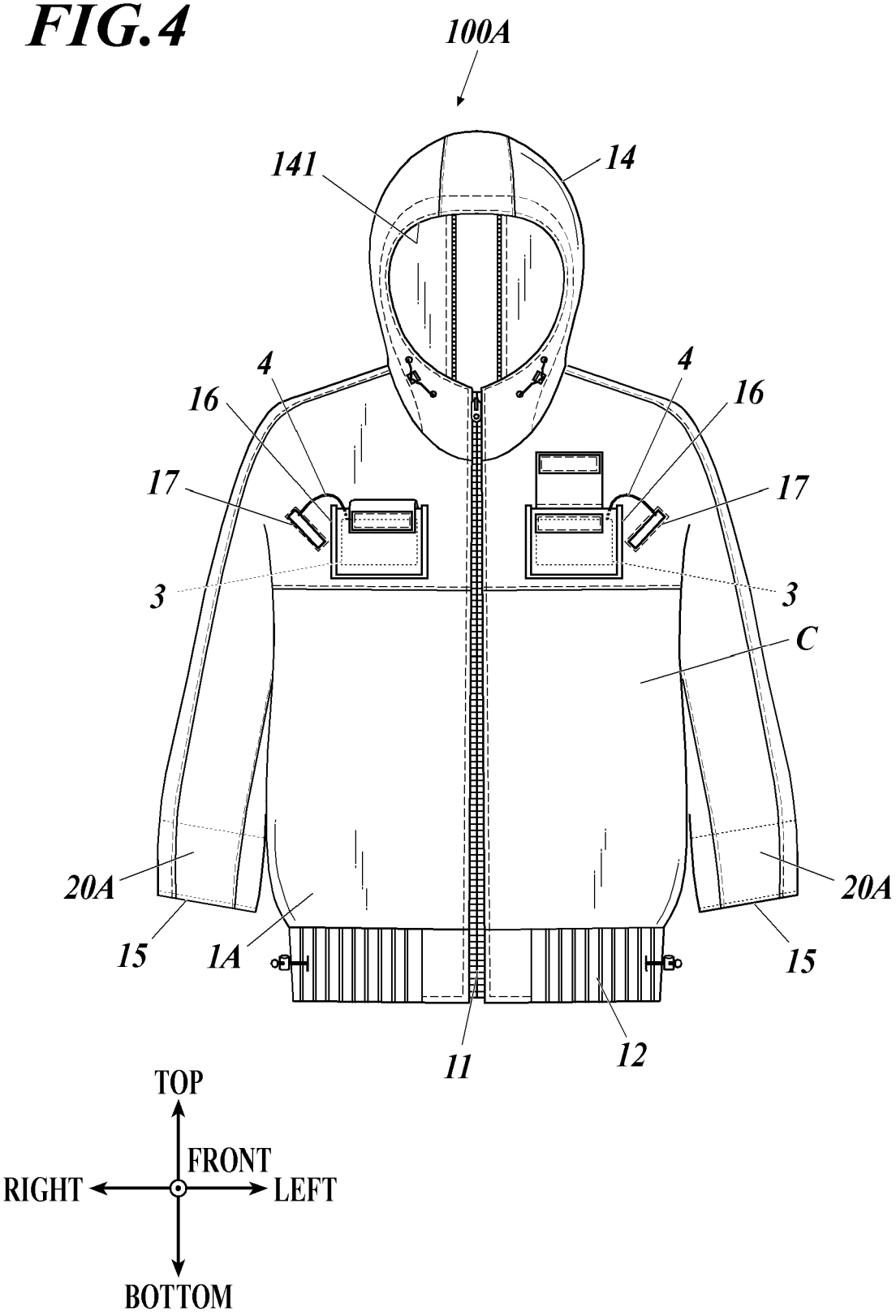

100
14
141
17
17
4
4
C
13
2
2
13
15
15
20
20
11
11
191
192
12
192
191
19
19
TOP
FRONT
RIGHT
LEFT
BOTTOM

FIG.4


100A
141
14
4
4
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3
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20A
20A
15
1A
15
11
12
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FRONT
RIGHT
LEFT
BOTTOM

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EUROPEAN SEARCH REPORT

Application Number
EP 20 21 4990

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X Y	US 4 603 440 A (HALE JAMES M [US]) 5 August 1986 (1986-08-05) * column 2, line 20 - line 22; claim 3; figure 1 *	1,2,6,7 8,9	INV. A41D13/002 A41D27/10 A41D27/20
X	US 2015/181960 A1 (GOEGLEIN PATRICK [US]) 2 July 2015 (2015-07-02) * figures 1-3 *	1,3-5	
X Y	WO 2016/170626 A1 (SFT LABORATORY CO LTD [JP]) 27 October 2016 (2016-10-27) * figure 9 *	10 8,9	

TECHNICAL FIELDS SEARCHED (IPC)
A41D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	6 May 2021	van Voorst, Frank

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06-05-2021

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 4603440 A	05-08-1986	NONE	
US 2015181960 A1	02-07-2015	NONE	
WO 2016170626 A1	27-10-2016	JP 6536674 B2	03-07-2019
		JP WO2016170626 A1	15-02-2018
		WO 2016170626 A1	27-10-2016

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Patent documents cited in the description

- JP 6030812 B **[0003]**
- JP 4329118 B **[0005]**
- JP 6536674 B **[0006]**