



(12) **EUROPEAN PATENT APPLICATION**
published in accordance with Art. 153(4) EPC

(43) Date of publication:
27.06.2018 Bulletin 2018/26

(51) Int Cl.:
A41D 27/10 ^(2006.01) **A41B 1/00** ^(2006.01)
A41B 1/08 ^(2006.01) **A41D 15/04** ^(2006.01)

(21) Application number: **16839049.0**

(86) International application number:
PCT/JP2016/072952

(22) Date of filing: **04.08.2016**

(87) International publication number:
WO 2017/033702 (02.03.2017 Gazette 2017/09)

(84) Designated Contracting States:
**AL AT BE BG CH CY CZ DE DK EE ES FI FR GB
GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO
PL PT RO RS SE SI SK SM TR**
Designated Extension States:
BA ME
Designated Validation States:
MA MD

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(30) Priority: **21.08.2015 JP 2015163575**

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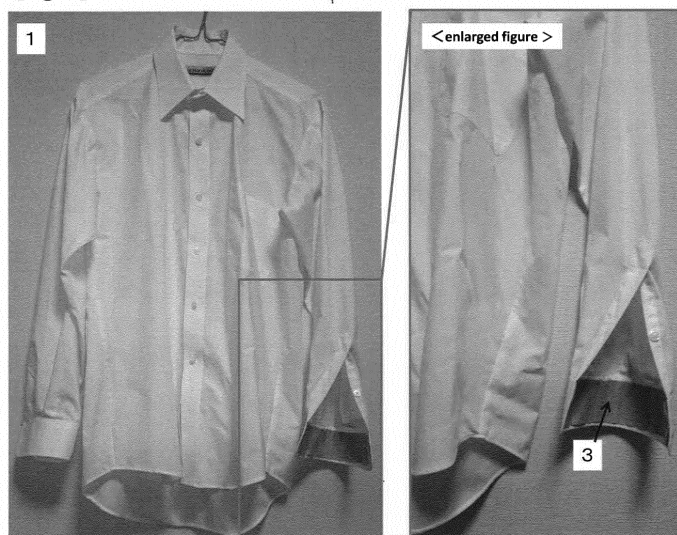
(54) **CLOTHING**

(57) The present invention suitably provides a garment that serves for easy removal of dirt adhering to the screen of a smart watch, wristwatch, etc. worn by the user.

The garment according to the present invention is

one used as long-sleeved outerwear provided with a sheet-like article formed of ultrafine fibers with an average monofilament diameter of 0.1 μm or more and 7 μm or less and attached to the inside and/or outside of a cuff.

【Fig. 1】



Description

TECHNICAL FIELD

5 [0001] The present invention relates to clothing, and specifically relates to a garment having a function suitable for wiping off dirt adhering to a screen of a smart watch, a wrist watch, or the like.

BACKGROUND ART

10 [0002] In recent years, wristwatch-type wearable devices called smart watches have been developed and rapidly come into widespread use. Smart watches can communicate with other devices such as smart phone. With various functions, they are expected to come into wider use in the future.

[0003] To use a smart watch, it is put on the wrist of an arm like a wristwatch and operated by directly touching the screen, which works as a touch panel, with a finger of the other arm.

15 [0004] However, since the screen is manipulated directly with a finger, there may occur problems including adherence of sebum etc. to the screen to stain it easily and make the screen difficult to read or make it look unattractive. To remove such adhered dirt, users may use cleaning cloth for eyeglass or the like to wipe it off or rub it against clothes or the like they wear.

[0005] Wiping out with cleaning cloth for eyeglass or the like is an easy way to remove dirt, but the user has to always carry cleaning cloth and it is inconvenient. Removing dirt by wiping it out with the garment that the user wear causes problems including making the garment dirty, failing to clean the dirt completely depending on the material of the garment, and the act of wiping with a garment is unsightly.

[0006] Thus, currently there is no effective way serving for easy and clean removal of dirt adhering to the screen of a smart watch or the like.

25 [0007] Conventionally, there has been a proposal of a detachable patch for clothes that is attached to the inside of an open part of the collar or a cuff of a garment that can easily catch grime when coming in contact with the skin (see Patent document 1).

[0008] There is another proposal that offers an adhesive-coated cloth that can be attached to a neck portion or a wrist portion of a long-sleeved shirt or a wrist watch or the like to serve for preventing sweat absorption and rash, preventing the garment from being damaged, or deodorizing it (see Patent document 2).

30 [0009] A shirt having a detachable collar or the like has also been proposed (see Patent document 3). The collar, which may include the neckband, can be attached to and detached from the main part of the shirt.

[0010] There is still another proposal that presents a garment having an article of a water-absorbing material that is attached to the outer surface of a cuff or the outer surface of a front part of the garment and that can be stretched to the face of the wearer (see Patent document 4).

35 [0011] All these conventional proposals, however, are intended for dirt on the skin, face, etc. of the wearer and not for easy and clean removal of dirt adhering on the screen of a device such as smart watch as described above.

PRIOR ART DOCUMENTS

40

PATENT DOCUMENTS

[0012]

45 Patent document 1: Japanese Unexamined Patent Publication (Kokai) No. HEI 8-325802
 Patent document 2: Japanese Unexamined Patent Publication (Kokai) No. HEI 9-137388
 Patent document 3: Japanese Unexamined Patent Publication (Kokai) No. 2001-11701
 Patent document 4: Japanese Unexamined Patent Publication (Kokai) No. 2008-75233

50 SUMMARY OF THE INVENTION

PROBLEMS TO BE SOLVED BY THE INVENTION

55 [0013] Thus, an object of the present invention is to provide a garment that serves for easy removal of dirt adhering to the screen of a smart watch etc. worn by the user.

MEANS OF SOLVING THE PROBLEMS

[0014] The garment according to the present invention is one used as outerwear provided with a sheet-like article formed of ultrafine fibers with an average monofilament diameter of 0.1 μm or more and 7 μm or less and attached to the inside and/or outside of a cuff.

[0015] According to a preferred embodiment of the garment of the present invention, the sheet-like article is attached to only the inside of a cuff and the material of the garment is different from that of the sheet-like article.

[0016] According to another preferred embodiment of the garment of the present invention, the sheet-like article is of a nonwoven fabric having the ultrafine fibers and containing a polymeric elastomer in the interior thereof.

[0017] According to another preferred embodiment of the garment of the present invention, the polymeric elastomer is one containing polyurethane as primary component and the polyurethane is a polycarbonate based polyurethane.

[0018] According to another preferred embodiment of the garment of the present invention, the sheet-like article has a function for wiping off dirt.

ADVANTAGEOUS EFFECTS OF THE INVENTION

[0019] The present invention presents a garment provided with a sheet-like article having ultrafine fibers with an average monofilament diameter of 0.1 μm or more and 7 μm or less and attached to the inside and/or outside of a cuff to serve to wipe off dirt adhering to the screen of a smart watch, wristwatch, or the like, of the wearer, thereby eliminating the need for carrying cleaning cloth and the need for wiping with the garment worn and enabling easy and clean removal.

BRIEF DESCRIPTION OF THE DRAWINGS

[0020]

[Fig. 1] Fig. 1 is a photograph to substitute a drawing showing a shirt provided on the inside of a cuff with a sheet-like article formed of ultrafine fibers with an average monofilament diameter of 2 μm .

[Fig. 2] Fig. 2 is a photograph to substitute a drawing showing a jacket provided on the outside of a cuff with a sheet-like article formed of ultrafine fibers with an average monofilament diameter of 2 μm .

DESCRIPTION OF PREFERRED EMBODIMENTS

[0021] The garment according to the present invention is one used as outerwear provided with a sheet-like article formed of ultrafine fibers with an average monofilament diameter of 0.1 μm or more and 7 μm or less and attached to the inside and/or outside of a cuff.

[0022] It is important for the garment according to the present invention to be provided on a cuff with a sheet-like article having ultrafine fibers with an average monofilament diameter of 0.1 μm or more and 7 μm or less. By rubbing the screen of a smart watch, wristwatch, etc. with the sheet-like article provided on a cuff, dirt adhering to the screen can be removed easily and cleanly.

[0023] It is important for the sheet-like article used for the present invention to be attached to the inside and/or outside of a cuff.

[0024] If the sheet-like article is attached to the inside of a cuff, it is possible for the screen of a smart watch etc. to be wiped by the cuff on the same side as the smart watch etc. If the sheet-like article is attached to the outside of a cuff, on the other hand, it is possible for the screen of a smart watch etc. to be wiped by the cuff of the sleeve opposite to the arm carrying the smart watch etc. Whether the sheet-like article is to be attached to the inside and/or outside of a cuff can be decided appropriately considering the type and design of the garment.

[0025] Fig. 1 shows a shirt provided on the inside of a cuff with a sheet-like article formed of ultrafine fibers with an average monofilament diameter of 2 μm . A sheet-like article 3 formed of ultrafine fibers is provided on the entire inside part of the left cuff of a shirt 1 used as outerwear, and dirt on the screen of a smart watch carried on the left wrist (not shown in Figure) can be wiped off easily by rubbing it with the sheet-like article 3. In Fig. 1, a sheet-like article is attached only to the inside of the left cuff, but a sheet-like article may be attached only to the right cuff or to both cuffs, or it may be attached to the outside of a cuff.

[0026] Fig. 2 shows a jacket provided on the outside of a cuff with a sheet-like article formed of ultrafine fibers with an average monofilament diameter of 2 μm . A sheet-like article 4 with a length of 4 cm formed of ultrafine fibers is provided on the outside of the right cuff of a jacket 2 used as outerwear, and dirt on the screen of a smart watch carried on the left wrist can be wiped off easily by rubbing it with the sheet-like article 4. In Fig. 2, a sheet-like article is attached only to the outside of the right cuff, but a sheet-like article may be attached only to the left cuff or to both cuffs, or it may be attached to the inside of a cuff.

[0027] It is preferable for the sheet-like article used for the present invention to be colored by dyeing. The design properties of the garment carrying the sheet-like article will not be deteriorated by coloring, and the color to be used for dyeing may be selected appropriately according to the design.

[0028] The sheet-like article attached to the garment according to the present invention becomes dirty as it is used to remove dirt from the screen of a smart watch, wristwatch, etc. by rubbing it, but repeated use is made possible by washing etc.

[0029] For the present invention, useful methods for attaching the sheet-like article to a cuff include, for example, fixing the sheet-like article by sewing with a thread and buttoning up in a detachable manner, and an appropriate method may be selected depending on the type of the garment. More specifically, the sheet-like article may be attached in a detachable manner in the case of jackets etc. that are not washed frequently, allowing the sheet-like article to be detached when becoming dirty and re-attached to the cuff after washing. Compared with this, it may be attached in a permanently fixed manner in the case of such garments as shirts that are washed frequently.

[0030] With respect to the shape of the sheet-like article to be attached to the garment according to the present invention, it may have a shape that enables attachment to only a part facing the back of a hand so that the sheet-like article comes in contact only with the screen of a smart watch etc., a ring like shape that enables attachment around a cuff, or a rectangular, circular, star-like, or heart-like shape etc., of which an appropriate one may be selected to meet the design of the garment. When attached only to a part of a cuff, it is preferable for the sheet-like article to have a width of 1 cm or more. The length of the sheet-like article from the cuff towards the shoulder is preferably 1 cm or more and 10 cm or less. It is only required to have a length that enables wiping of the smart watch, and the cost will increase if it is too long. If it is attached to the outside of a cuff, an appropriate size may be selected to meet the design of the garment.

[0031] It is preferable for the sheet-like article to have a thickness of 0.4 mm or more and 2 mm or less. A thickness of 0.4 mm or more ensures physical properties required to resist wearing and wiping whereas a thickness of 2 mm or less ensures comfortable wearing.

[0032] It is important for the fibers used to form the sheet-like article attached to the garment according to the present invention to have an average monofilament diameter of 0.1 μm or more and 7 μm or less. High wiping performance, a soft feel to the skin, and comfortable wearing are achieved if the average monofilament diameter is 7 μm or less, preferably 5 μm or less, and more preferably 4 μm or less.

[0033] On the other hand, controlling the average monofilament diameter at 0.1 μm or more, preferably 0.7 μm or more, and more preferably 1 μm or more, ensures high post-dyeing color development performance.

[0034] Such ultrafine fibers used to form the sheet-like article attached to the garment according to the present invention may be of such materials as polyesters including polyethylene terephthalate, polybutylene terephthalate, polytrimethylene terephthalate, polyethylene-2,6-naphthalene dicarboxylate, and polylactic acid; polyamides including 6-nylon and 66-nylon; and other various synthetic fiber materials including acrylic, polyethylene, polypropylene, and thermoplastic cellulose.

[0035] In particular, polyester fibers such as polyethylene terephthalate, polybutylene terephthalate, and polytrimethylene terephthalate are particularly preferred from the viewpoint of wear resistance, dimensional stability, and dyeing properties. From the viewpoint of environment protection, fibers derived from recycled material or plant-derived material may be used. Furthermore, they may contain ultrafine fibers of different materials.

[0036] It is also preferable for the polymer used as material of such ultrafine fibers to contain inorganic particles such as titanium oxide particles and additives such as lubricant, pigment, thermal stabilizer, ultraviolet absorber, electrically conductive agent, heat storage agent, and antibacterial agent to meet various purposes.

[0037] With respect to the cross-sectional shape of the ultrafine fibers, those having a circular cross section shape will work satisfactorily, but ultrafine fibers having modified cross-section shapes such as elliptic, flattened, polygonal such as triangular, fan-like, and crossed may be adopted to ensure high wiping performance.

[0038] The sheet-like article may be in the form of nonwoven fabric, woven fabric, knitted fabric, or the like, of which an appropriate one may be adopted, but it is preferably in the form of nonwoven fabric because of being free from fraying during cutting and having a comfortable feel to the touch.

[0039] The nonwoven fabric may be either short fiber nonwoven fabric or long fiber nonwoven fabric, but the use of short fiber nonwoven fabric is preferred because of easy untangling of the nap, which influences the wiping performance.

[0040] Woven fabric, knitted fabric, or the like may be inserted in the nonwoven fabric with the aim of improving the strength etc.

[0041] When using a nonwoven fabric, a polymeric elastomer containing polyurethane as primary component may be added to the nonwoven fabric to ensure firm holding of the shape. An elastic polymer is a stretchable polymeric compound having rubber elasticity and major elastic polymers include polyurethane, styrene butadiene rubber (SBR), nitrile butadiene rubber (NBR), and acrylic resin. Here, the term "primary component" used herein means that the polyurethane component accounts for more than 50 mass% of the total mass of the elastic polymer.

[0042] The use of an elastic polymer containing polyurethane as primary component serves to produce a sheet-like article having a solid feel to the touch and practically durable physical properties.

[0043] There are various types of polyurethane including organic solvent-soluble ones that are used in a state of being dissolved in an organic solvent and water-dispersible ones that are used in a state of being dispersed in water, both of which can work for the present invention.

[0044] Polyurethane obtained by reaction of a polymer diol, an organic diisocyanate, and a chain extending agent is preferred as the polyurethane component to be used for the present invention.

[0045] For example, a polycarbonate-based, polyester-based, polyether-based, silicone-based, or fluorine-based diol can be used as the aforementioned polymer diol, and a copolymer of a combination thereof can also be used. The sheet-like article attachable to the garment according to the present invention is designed for removal of dirt adhering to the screen of a smart watch etc. and accordingly, it catches dirt such as sebum more easily than the cuff portions of common garments and undergoes washing more frequently than common garments since the sheet-like article can be detached and washed repeatedly as it catches dirt. Thus, the use of a polycarbonate based polymer diol is preferable from the viewpoint of durability.

[0046] A polycarbonate based diol as described above can be produced, for example, through ester exchange reaction between alkylene glycol and ester carbonate or through reaction of phosgene or a chloroformate with alkylene glycol.

[0047] Examples of the alkylene glycol include linear alkylene glycols such as ethylene glycol, propylene glycol, 1,4-butane diol, 1,5-pentane diol, 1,6-hexane diol, 1,9-nonane diol, and 1,10-decane diol; branched alkylene glycols such as neopentyl glycol, 3-methyl-1,5-pentane diol, 2,4-diethyl-1,5-pentane diol, and 2-methyl-1,8-octane diol; alicyclic diols such as 1,4-cyclohexane diol; aromatic diols such as bisphenol A; and others such as glycerin, trimethylol propane, and pentaerythritol. For the present invention, either a polycarbonate based diol produced from a single alkylene glycol or a copolymerized polycarbonate based diol produced from two or more types of alkylene glycols can be used.

[0048] The content of the elastic polymer can be adjusted appropriately considering the type, texture, and physical properties of the polyurethane used. The content of the elastic polymer is preferably 10 mass% or more and 100 mass% or less, and more preferably 20 mass% or more and 50 mass% or less, relative to the ultrafine fibers in the sheet-like article.

[0049] The sheet-like article to be attached to the garment according to the present invention may contain, for example, dyes, pigments, softening agent, texture adjustor, pilling prevention agent, antibacterial agent, deodorant, water repellent agent, light resisting agent, or weathering agent.

[0050] The sheet-like article to be attached to the garment according to the present invention preferably has gigging (nap) of ultrafine fibers over the surface of the sheet-like article from the viewpoint of improved wiping performance and feel to the touch. The nap preferably has a length of 50 μm or more and 400 μm or less. A nap length of 50 μm or more ensures improved dirt wiping performance whereas a nap length of 400 μm or less ensures prevention of fuzz from dropping while the garment is worn.

[0051] Furthermore, the sheet-like article used for the present invention can be treated with finishing agents including softening agent, such as silicone, and antistatic agent.

[0052] The garment according to the present invention is worn on the upper half of the body and may be categorized as upper garment. Attaching the sheet-like article to a cuff of an upper garment serves for easy wiping of dirt on the screen of a smart watch etc. worn on the wrist. Accordingly, it is preferable for the garment according to the present invention to have long sleeves. However, there are devices wearable on the upper arm and a short-sleeved garment may be better for such a wearable device. It may be three-quarter sleeved or wrist-sleeved.

[0053] There are overalls-like garments that combine trousers and a jacket, and the sheet-like article can be attached to a cuff of such a garment.

[0054] According to a preferred embodiment of the present invention, the garment is provided with the sheet-like article only on the inside of a cuff and the garment itself is of a material that is different from that of the sheet-like article. According to the present invention, the advantageous effect of the invention can be realized in a variety of garments of various materials including jackets, shirts, T-shirts, sweat shirts, wind breakers, and blousons, with no limitations on design etc.

[0055] The sheet-like article to be attached to the garment according to the present invention preferably has the function of wiping off dirt. The sheet-like article to be attached has ultrafine fibers with an average monofilament diameter of 0.1 μm or more and 7 μm or less and accordingly must have a high dirt removal performance, but it is also preferable to use cleaning cloth such as lens cloth that has ultrafine fibers with an average monofilament diameter of 0.1 μm or more and 7 μm or less is specially designed for wiping function.

EXAMPLES

<Evaluation methods>

(1) Wiping performance evaluation

[0056] Artificial sebum composed of the following components was prepared and 0.1 g thereof was spread uniformly

with a brush over the touch panel of a smart watch. Then, a tester wearing it wiped the touch panel by five repetitions of to-and-fro wiping motion using a sheet-like article attached to a garment and an evaluation was made based on visual observation of the state of the remaining artificial sebum. A specimen that obtained a rating of "o" was judged as acceptable.

- : Artificial sebum is not found on the touch panel, suggesting that it had been wiped off completely.
 ×: Artificial sebum is found remaining on the touch panel.

- Components of artificial sebum: stearic acid (15 parts)
- oleic acid (15 parts)
- extremely hardened oil of beef tallow (15 parts)
- olive oil (15 parts)
- cetyl alcohol (15 parts)
- paraffin (15 parts)
- cholesterol (5 parts)

[Example 1]

[0057] A sheet-like article was prepared by napping and dyeing a piece of nonwoven fabric formed of ultrafine fibers of polyethylene terephthalate (PET) with a fiber diameter of 2 μm containing polyurethane in the interior thereof, and then it was attached to the inside of the left cuff of a 100% cotton shirt to prepare a garment sample (Fig. 1).

[0058] After putting on the garment prepared above, a smart watch on which artificial sebum had been spread was put on the left wrist, and the artificial sebum was removed with the right hand by rubbing the screen of the smart watch with the sheet-like article attached to the inside of the left cuff of the shirt. Consequently it was found that none of the artificial sebum spread was left, suggesting that it had been wiped off completely. Furthermore, wiping was performed easily because the sheet-like article was on the inside of the left cuff of the garment. Results are given in Table 1.

[Example 2]

[0059] A sheet-like article was prepared by napping and dyeing a piece of nonwoven fabric formed of ultrafine fibers of PET with a fiber diameter of 5 μm containing polyurethane in the interior thereof, and then it was attached to the inside of the left cuff of a 100% cotton shirt to prepare a garment sample (Fig. 1).

[0060] After putting on the garment prepared above, a smart watch on which artificial sebum had been spread was put on the left wrist, and the artificial sebum was removed with the right hand by rubbing the screen of the smart watch with the sheet-like article attached to the inside of the left cuff of the shirt. Consequently it was found that none of the artificial sebum spread was left, suggesting that it had been wiped off completely. Furthermore, wiping was performed easily because the sheet-like article was on the inside of the left cuff of the garment. Results are given in Table 1.

[Example 3]

[0061] A sheet-like article was prepared by napping and dyeing a piece of nonwoven fabric formed of ultrafine fibers of PET with a fiber diameter of 2 μm containing polyurethane in the interior thereof, and then it was attached to the outside of the right cuff of a jacket to prepare a garment sample (Fig. 2).

[0062] After putting on the garment prepared above, a smart watch on which artificial sebum had been spread was put on the left wrist, and the artificial sebum was removed by rubbing the screen of the smart watch with the sheet-like article attached to the outside of the right cuff of the shirt. Consequently it was found that none of the artificial sebum spread was left, suggesting that it had been wiped off completely. Furthermore, wiping was performed easily because the sheet-like article was on the outside of the right cuff of the garment. Results are given in Table 1.

[Example 4]

[0063] A piece of Toraysee (registered trademark) MC cleaning cloth (manufactured by Toray Industries, Inc.), which is a woven fabric formed of ultrafine fibers of PET with a fiber diameter of 2 μm , attached to the inside of the left cuff of a 100% cotton shirt to prepare a garment sample (Fig. 1).

[0064] After putting on the garment prepared above, a smart watch on which artificial sebum had been spread was put on the left wrist, and the artificial sebum was removed with the right hand by rubbing the screen of the smart watch with the cleaning cloth attached to the inside of the left cuff of the shirt. Consequently it was found that none of the artificial sebum spread was left, suggesting that it had been wiped off completely. Furthermore, wiping was performed

easily because the sheet-like article was on the inside of the left cuff of the garment. Results are given in Table 1.

[Comparative example 1]

[0065] After putting on a 100% cotton shirt, a smart watch on which artificial sebum had been spread was put on the left wrist, and the artificial sebum was removed with the right hand by rubbing the screen of the smart watch with the inner surface of the left cuff of the shirt. Consequently, some of the artificial sebum spread was found remaining, suggesting that it had not been wiped off completely. Results are given in Table 1.

[Table 1]

[0066]

[Table 1]

	Garment		Properties of sheet-like article		Wiping performance
	Type of garment	Attachment position of sheet-like article	Average monofilament diameter (μm)	Constitution	
Example 1	shirt	inside of cuff	2	non-woven fabric	○
Example 2	shirt	inside of cuff	5	non-woven fabric	○
Example 3	jacket	outside of cuff	2	non-woven fabric	○
Example 4	shirt	inside of cuff	2	woven fabric	○
Comparative example 1	shirt	-	-	-	×

Explanation of Numerals

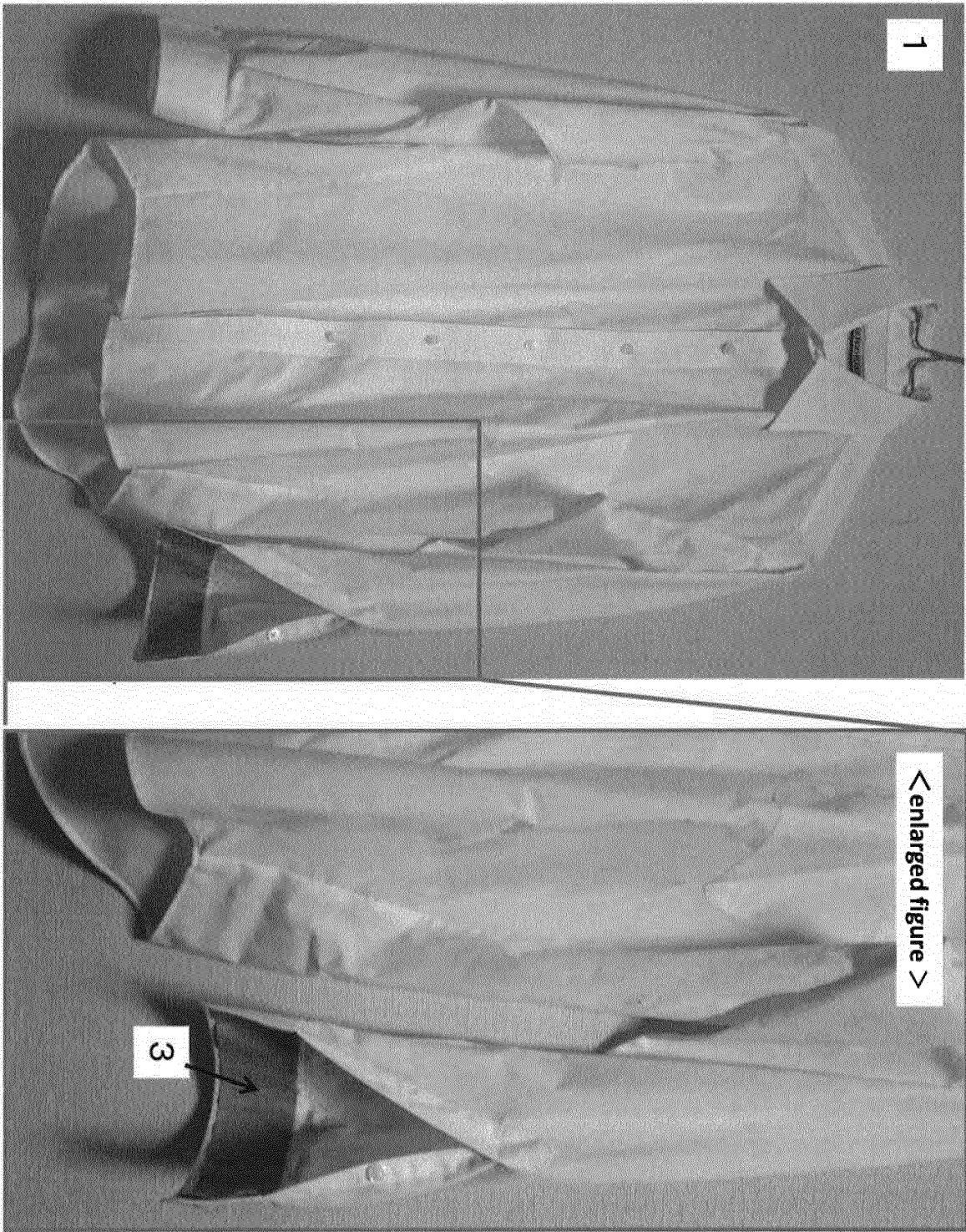
[0067]

- 1: shirt
- 2: jacket
- 3: sheet-like article attached to the inside of a cuff
- 4: sheet-like article attached to the outside of a cuff

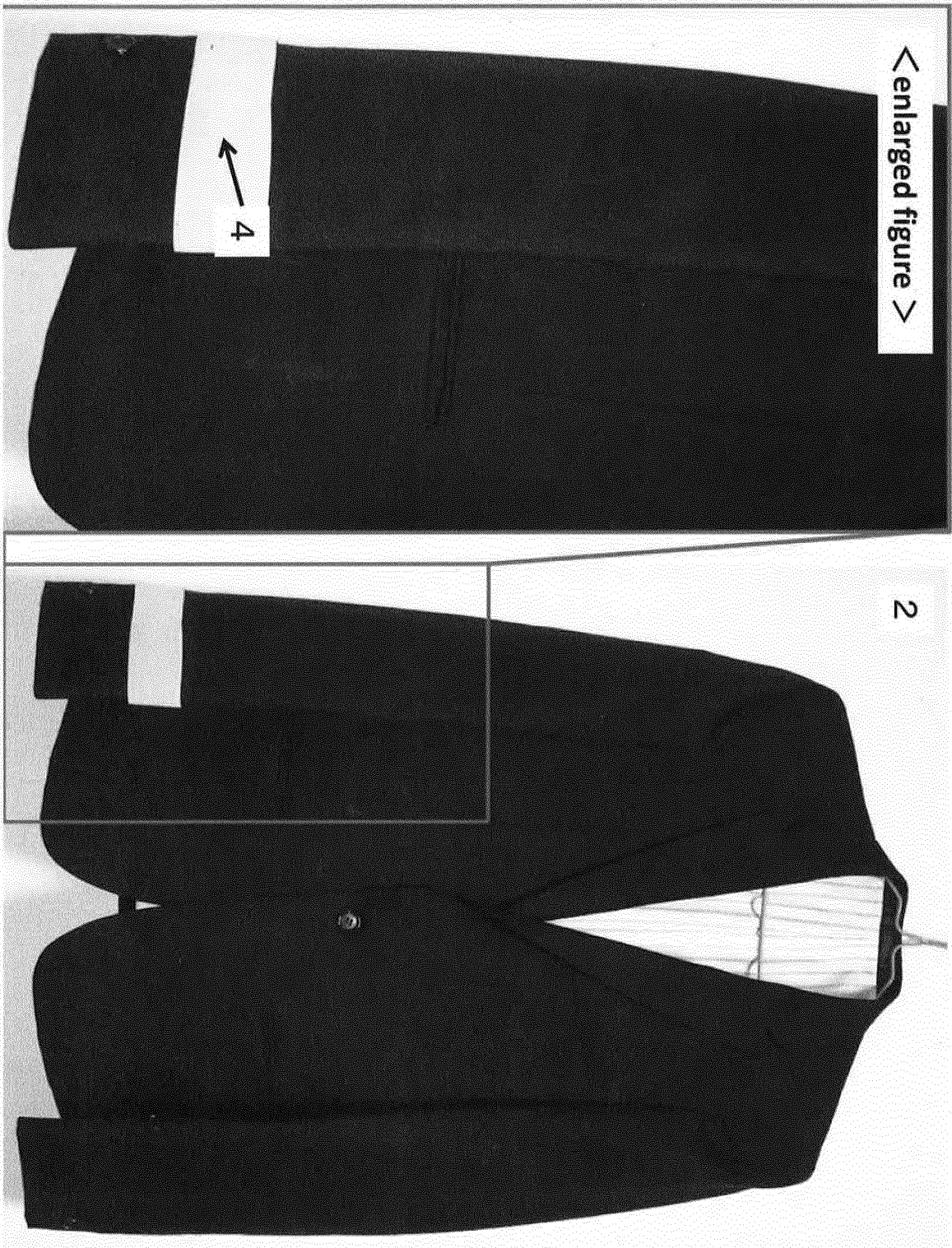
Claims

1. A garment designed as outerwear comprising a sheet-like article formed of ultrafine fibers with an average monofilament diameter of 0.1 μm or more and 7 μm or less and attached to the inside and/or outside of a cuff.
2. A garment as claimed in claim 1, wherein the sheet-like article is attached only on the inside of a cuff and the garment itself is of a material that is different from that of the sheet-like article.
3. A garment as claimed in either claim 1 or 2, wherein the sheet-like article is of a nonwoven fabric having ultrafine fibers and containing a polymeric elastomer in the interior thereof.
4. A garment as claimed in claim 3, wherein the polymeric elastomer is one containing polyurethane as primary component, the polyurethane being a polycarbonate based polyurethane.
5. A garment as claimed in any one of claims 1 to 4, wherein the sheet-like article has a function of wiping off dirt.

【Fig. 1】



【Fig. 2】



INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2016/072952

A. CLASSIFICATION OF SUBJECT MATTER

A41D27/10(2006.01)i, A41B1/00(2006.01)i, A41B1/08(2006.01)i, A41D15/04(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)

A41D15/00-27/10, A41B1/00-1/08

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

Jitsuyo Shinan Koho 1922-1996 Jitsuyo Shinan Toroku Koho 1996-2016
Kokai Jitsuyo Shinan Koho 1971-2016 Toroku Jitsuyo Shinan Koho 1994-2016

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

JSTPlus/JMEDPlus/JST7580(JDreamIII)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	Microfilm of the specification and drawings annexed to the request of Japanese Utility Model Application No. 140547/1979(Laid-open No. 60720/1981)	1, 5
A	(Toray Industries, Inc.), 23 May 1981 (23.05.1981), page 3, lines 7 to 11; page 6, lines 7 to 10 (Family: none)	2-4
A	JP 58-209330 A (Toray Industries, Inc.), 06 December 1983 (06.12.1983), (Family: none)	1-5
A	JP 3179218 U (Toray Industries, Inc.), 18 October 2012 (18.10.2012), (Family: none)	1-5

☒ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

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Date of the actual completion of the international search
18 October 2016 (18.10.16)

Date of mailing of the international search report
25 October 2016 (25.10.16)

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

Authorized officer

Telephone No.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2016/072952

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP 3132948 U (Shigeyuki SUZUKI), 28 June 2007 (28.06.2007), (Family: none)	1-5
A	JP 2014-98219 A (KB Seiren, Ltd.), 29 May 2014 (29.05.2014), (Family: none)	1-5

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

REFERENCES CITED IN THE DESCRIPTION

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- JP 2008075233 A [0012]