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(54) **Clothing structure**

(57) A clothing structure comprises a clothing body 10 and two sleeves 20. The clothing body 10 includes two upper shoulder portions 11, which extend from the neck to two sides, and are provided with shoulder-free 13 and armpit-free portions 14. The armpit-free portion 14 extends to the lower armpit 12. Two sleeves 20 are formed at the outsides of clothing body 10 and including two sleeve bodies 21. A shoulder mend portion 23 and an armpit mend portion 24 are formed respectively adjacent to the sides. The shoulder mend portion 23 and the armpit mend portion 24 are corresponding, and joined to the shoulder-free portion 13 and the armpit-free portion 14 as a joint 15. The armpit mend portions 24 include an armpit arm side 241 and an armpit body side 242, and portions extend respectively from the sleeve bodies 21 and the clothing body 10 that are opposite to the armpits 12 to form an included angle. The armpit mend portion 24 is made of functional fiber covering lower portions of armpit 12 for decreasing perspiration, inhibiting bacteria growth, and eliminating body odor.

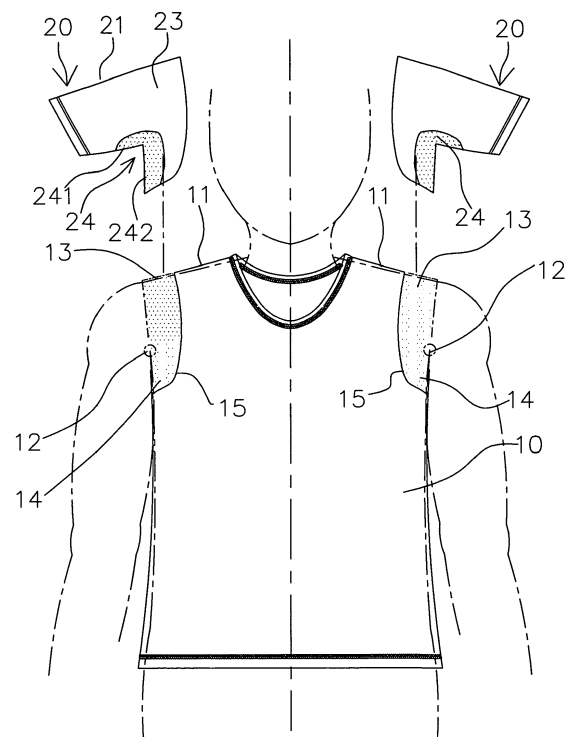


FIG. 3

**Description****BACKGROUND OF THE INVENTION****Field of the Invention**

**[0001]** This invention relates to a clothing structure and particularly to a piece of clothing that may function to achieve the antibacterial, antiperspirant, sweat-absorbent, breathable, and quick-drying effects for the human armpit, thereby effectively eliminating the odor.

**Description of the Related Art**

**[0002]** Generally, "underarm odor" and "body odor" is special smell that is extruded mainly from the product caused by the interaction of microbes and secretion in the sweat glands of the armpit, which is more obvious in hot days causing the human to sweat more; the light yellow sweat traces are always left on the clothing, as shown in FIG. 1 Although this phenomenon does not affect the human health, it causes many problems on the social and interpersonal relationship. Since the odor is caused by the sweat and the bacteria, the solutions of odor elimination are the perspiration control and the destruction of bacteria. Hence, products on the market are developed to achieve the two objectives.

**[0003]** Generally, there are several means solving the odor, as shown below:

## 1. Antiperspirant and Deodorant:

Advantage: Easy use and purchase and quite proper price; generally directly applied to the armpit and not limited to the wear.

Disadvantage: Possibly subject to body skin allergy and increasing the possibility of cause of breast cancer because inhibition of sweat is unnatural behavior to body and chemicals are found in these products from the studies and research.

## 2. Armpit patch:

Advantage: No impact to the health because of no direct apply to the skin; disposable and healthy; random to paste on all clothes and readily replaceable.

Disadvantage: the fact that the patch must be pasted and torn off every day and the sweat might accumulate on the patch, which makes the patch sticky and wet and thus the user feel uncomfortable and foreign matters existing, easily being identified by others from the user's appearance; and the fact that when the patch is torn out of the clothes, the fiber of clothes might be damaged and, the product is the daily consumable and replaceable for long-

term use, which might result in the burden on the consumer cost.

3. Functional fiber material deposited over the armpit portion in the inside of the clothes or directly sewn to the armpit portion of the clothes, as shown in FIG. 2:

Advantage: the fact that the material is deposited without the requirement of adhesive, can be repeatedly used after washing, and is cheaper than the armpit patch.

Disadvantage: the fact that when the user raises his or her armpit, because there is an obvious joint between the functional fiber material and the sleeve and clothing, the look is unsightly and, the material makes the user feel a foreign matter existing, thereby decreasing the texture of the clothing.

4. Full-piece antibacterial and deodorant clothing:

Advantage: the fact that the clothing solves the defects of the armpit patch and

the functional fiber material deposited over the armpit portion in the inside of the clothes or directly sewn to the armpit portion of the clothes.

Disadvantage: the fact that the cost is extremely high and the functional material used for the armpit is not definitely applicable to the clothing. Consequently, because of the technical defects of described above, the applicant keeps on carving unflaggingly through wholehearted experience and

research to develop the present invention, which can effectively improve the defects described above.

**SUMMARY OF THE INVENTION**

**[0004]** To improve the conventional methods of solving the body odor, this inventor developed a clothing structure according to this invention after having made extraordinarily painstaking efforts to study with a quiet mind for many years. This invention is to provide the sleeve with a functional fiber that covers at least all the armpit portion and has antibacterial, antiperspirant, sweat-absorbent, breathable, and quick-drying features, thereby effectively eliminating the odor of armpit.

**[0005]** This invention is further to provide a feature that adds the texture and value of the clothing, of which the artistic design is not changed to the best, and that does not make any foreign matter exist in the armpit portion.

**[0006]** In order to achieve the objects mentioned above, the clothing structure according to this invention comprises: a clothing body and two sleeves. The clothing body includes two upper shoulder portions. The upper shoulder portions extend from the neck portion to two

sides. The outsides of the upper shoulder portions are respectively provided with a shoulder-free portion and an armpit-free portion. Further, the armpit-free portion extends downward at least under the armpit. The two sleeves is formed at the two outsides of the clothing body, including the two sleeve bodies, and a shoulder mend portion and an armpit mend portion are formed respectively adjacent to the sides of the clothing body. The shoulder mend portion and the armpit mend portion are respectively corresponding and joined to the shoulder-free portion and the armpit-free portion so as to form a joint. The armpit mend portion further includes an armpit arm side and an armpit body side. The portions extend respectively from the outside of sleeve body and the lower portion of clothing body that are opposite to the human armpits to form an included angle. The armpit mend portion is made of the functional fiber covers at least the lower portion of armpit; namely, and the armpit portion has at least antibacterial, antiperspirant, sweat-absorbent, breathable, and quick-drying features. Thus, when a user wears the clothes according to this invention, the armpit mend portion of functional fiber can be made to at least extends to and cover the lower portion of armpit for decreasing perspiration and inhibiting the growth of bacteria and thereby eliminating the body odor.

[0007] To make the armpit mend portion serve as the functional fiber, when the armpit mend portion weaving proceeds, the portion may also be directly changed to the functional fiber and weaved on a textile machine.

[0008] In order to achieve the objects mentioned above, a means according to this invention comprises: making all the sleeves of the functional fiber.

[0009] In order to achieve the objects mentioned above, a means according to this invention is characterized that the armpit mend portion of the sleeve extends downward beyond the armpit portion and further extends to the inside of the clothing body to form a concave arc region.

[0010] Thus, when wearing the clothes according to this invention, the user may prevent the perspiration and the bacteria generation. The manufacturing process is even very simple. Further, the sewn texture formed on the armpit portion of the sleeve of the clothes or on the functional fiber material directly sewn over the armpit portion in the inside of the clothes may be ignored for fear of the defect of the unsightly look.

## BRIEF DESCRIPTION OF THE DRAWINGS

[0011]

FIG. 1 is a schematic view illustrating a piece of conventional clothing;

FIG. 2 is a schematic view illustrating the structure of conventional clothing of which an armpit portion connects with the functional fiber;

FIG. 3 is a schematic exploded view of a first embodiment of this invention;

FIG. 4 is a schematic exploded view of a second embodiment of this invention; and

FIG. 5 is a schematic view illustrating a third embodiment of this invention.

## DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0012] Now, the present invention will be described more specifically with reference to the following embodiments. It is to be noted that the following descriptions of preferred embodiments of this invention are presented herein for purpose of illustration and description only; it is not intended to be exhaustive or to be limited to the precise form disclosed.

[0013] With reference to FIG. 3 as a first embodiment of this invention that illustrating a clothing structure, the clothing 1 comprises a clothing body 10 and two sleeves 20.

[0014] The clothing body 10 includes two upper shoulder portions 11. The upper shoulder portions 11 extend from the neck portion to two sides. The outsides of the upper shoulder portions 11 are respectively provided with a shoulder-free portion 13 and an armpit-free portion 14. The armpit-free portion 14 extends downward at least under the armpit 12.

[0015] The sleeve 20 is formed at the outside of the clothing body 10, including the two sleeve bodies 21, and a shoulder mend portion 23 and an armpit mend portion 24 are formed respectively adjacent to the sides of the clothing body 10. The shoulder mend portion 23 and the armpit mend portion 24 are respectively corresponding and joined to the shoulder-free portion 13 and the armpit-free portion 14 so as to form a joint 15. With the joint 15, the clothing body 10 and the sleeve 20 are distinguished. Further, the armpit mend portion 24 includes an armpit arm side 241 and an armpit body side 242. The armpit arm side 241 and the armpit body side 242 extend respectively toward the outside of sleeve body 21 and the lower portion of clothing body 10 that are opposite to the human armpits 12 to form an included angle (acute angle, right angle, obtuse angle, or arc angle). The armpit mend portion 24 covers at least the lower portion of armpit 12 and is made of the functional fiber.

[0016] In the above mentioned embodiment illustrating in detail the armpit body side 242, it is apparent that the armpit mend portion 24, opposite to the human armpit 12, extends toward the lower portion of clothing body 10 to the joint 15, and the armpit body side 242 and the side of clothing body 10 are at the same side.

[0017] To achieve the embodiment, when the sleeve 20 is weaved, at least two different kinds of fibers may be used, and when the armpit mend portion 24 is weaved, the material for the portion may be replaced with the functional fiber. Accordingly, when the user wears the clothes according to this invention, the armpit mend portion 24 may be made to cover at least the lower portion of armpit 12 for decreasing perspiration and inhibiting the growth

of bacteria, thereby eliminating the body odor.

[0018] With reference to FIG. 4 illustrating a second embodiment of this invention, what is in the embodiment is different from what is in the first embodiment in that all the sleeve 20 is made of the functional fiber.

[0019] With reference to FIG. 5 illustrating a third embodiment of this invention, what is in the embodiment is different from what is in the above mentioned embodiment in that: the armpit mend portion 24 of the sleeve 20 and the armpit-free portion 14 of the clothing body 10 extends downward beyond the armpit 12 and further extends toward the inside of the clothing body 10 to form a concave arc region.

[0020] In this invention, the so-called armpits are concave portions between the arms of the body and the portion connecting to the upper body that is adjacent to the inner side of the body. The skin of the concave portion is covered with wrinkles and is a region of the body that more easily sweats.

[0021] The functional fiber according to this invention is named according to "New functional high-tech man-made fibers" published by Taiwan Man Made Fiber Industries Association (TMMFA). The functional fiber has features of winking fibers, antibacterial and deodorant fiber and the like.

[0022] The functional fiber may also be a "green fiber", which works with nano-acetate fiber to enhance the deodorant functionality, thereby making the user, after wearing the clothes of the fiber, maintain freshness smell for a long time. Besides, with the antibacterial functionality increasing, the green fiber is made with nano-silver fiber and is based on polyacrylate acrylate for the carrier to attach acidification silver particles on to the fiber surface in the manner of chemical bonding for enhance the antibacterial effect.

[0023] While the invention has been described in terms of what is presently considered to be the most practical and preferred embodiments, it is to be understood that the invention needs not be limited to the disclosed embodiment. On the contrary, it is intended to cover various modifications and similar arrangements included within the spirit and scope of the appended claims which are to be accorded with the broadest interpretation so as to encompass all such modifications and similar structures.

[0024] To sum up, the clothing structure according to this invention is firstly invented for the shape, structure, and device and is hard to come by, available, novel, and progressive, completely meets the requirements of application for the ideal type patent.

## Claims

### 1. A clothing structure, comprising:

a clothing body 10, including two upper shoulder portions 11, the upper shoulder portions 11 extending from the neck portion to two sides, the

outsides of the upper shoulder portions 11 being respectively provided with a shoulder-free portion 13 and an armpit-free portion 14, the armpit-free portion 14 extending downward at least under the armpit 12; and

two sleeves 20, being formed at the two outsides of the clothing body 10 and

including two sleeve bodies 21, and a shoulder mend portion 23 and an armpit mend portion 24 being formed respectively adjacent to the sides of the clothing body 10, the shoulder mend portion 23 and the armpit mend portion 24 being respectively corresponding and joined to the shoulder-free portion 13 and the armpit-free portion 14 so as to form a joint 15, the armpit mend portion 14 including an armpit arm side 241 and an armpit body side 242, the armpit arm side 241 and the armpit body side 242 extending respectively toward the outside of sleeve body 21 and the lower portion of clothing body 10 that are opposite to the human armpits 12 to form an included angle, the armpit mend portion 24 covering at least the lower portion of armpit 12 and being made of the functional fiber.

2. The clothing structure according to claim 1, **characterized in that** the armpit body side 242 means that the armpit mend portion 242, opposite to the human armpit 12, extends toward the lower portion of clothing body 10 to the joint 15 and the armpit body side 242 and the side of clothing body 10 are at the same side.

3. The clothing structure according to claim 1, **characterized in that** the functional fiber has antibacterial, antiperspirant, sweat-absorbent, breathable, and quick-drying features.

4. The clothing structure according to claim 1, **characterized in that** the armpit mend portion 24 extends downward beyond the armpit 12 portion and further extends to the inside of the clothing body 10 to form a concave arc region.

5. The clothing structure according to claim 1, **characterized in that** the included angle is an acute angle, a right angle, an obtuse angle, or an arc angle.

6. A clothing structure, comprising:

a clothing body 10, including two upper shoulder portions 11, the upper shoulder portions 11 extending from the neck portion to two sides, the outsides of the upper shoulder portions 11 being respectively provided with a shoulder-free portion 13 and an armpit-free portion 14, the armpit-free portion 14 extending downward at least under the armpit 12; and

two sleeves 20, being formed at the two outsides of the clothing body 10 and including two sleeve bodies 21, and a shoulder mend portion 23 and an armpit mend portion 24 being formed respectively adjacent to the sides of the clothing body 10, the shoulder mend portion 23 and the armpit mend portion being 24 respectively corresponding and joined to the shoulder-free portion 13 and the armpit-free portion 14 so as to form a joint 15, the armpit mend portion 14 including an armpit arm side 241 and an armpit body side 242, the armpit arm side 241 and the armpit body side 242 extending respectively toward the outside of sleeve body 21 and the lower portion of clothing body 10 that are opposite to the human armpits 12 to form an included angle, the armpit mend portion 24 covering at least the lower portion of armpit 12, and all the sleeve 20 being made of the functional fiber.

7. The clothing structure according to claim 6, **characterized in that** the armpit body side 242 means that the armpit mend portion 24, opposite to the human armpit 12, extends toward the lower portion of clothing body 10 to the joint 15 and the armpit body side 242 and the side of clothing body 10 are at the same side.
8. The clothing structure according to claim 6, **characterized in that** the functional fiber has antibacterial, antiperspirant, sweat-absorbent, breathable, and quick-drying features.
9. The clothing structure according to claim 6, **characterized in that** the armpit mend portion 24 extends downward beyond the armpit 12 portion and further extends to the inside of the clothing body 10 to form a concave arc region.
10. The clothing structure according to claim 6, **characterized in that** the included angle is an acute angle, a right angle, an obtuse angle, or an arc angle.

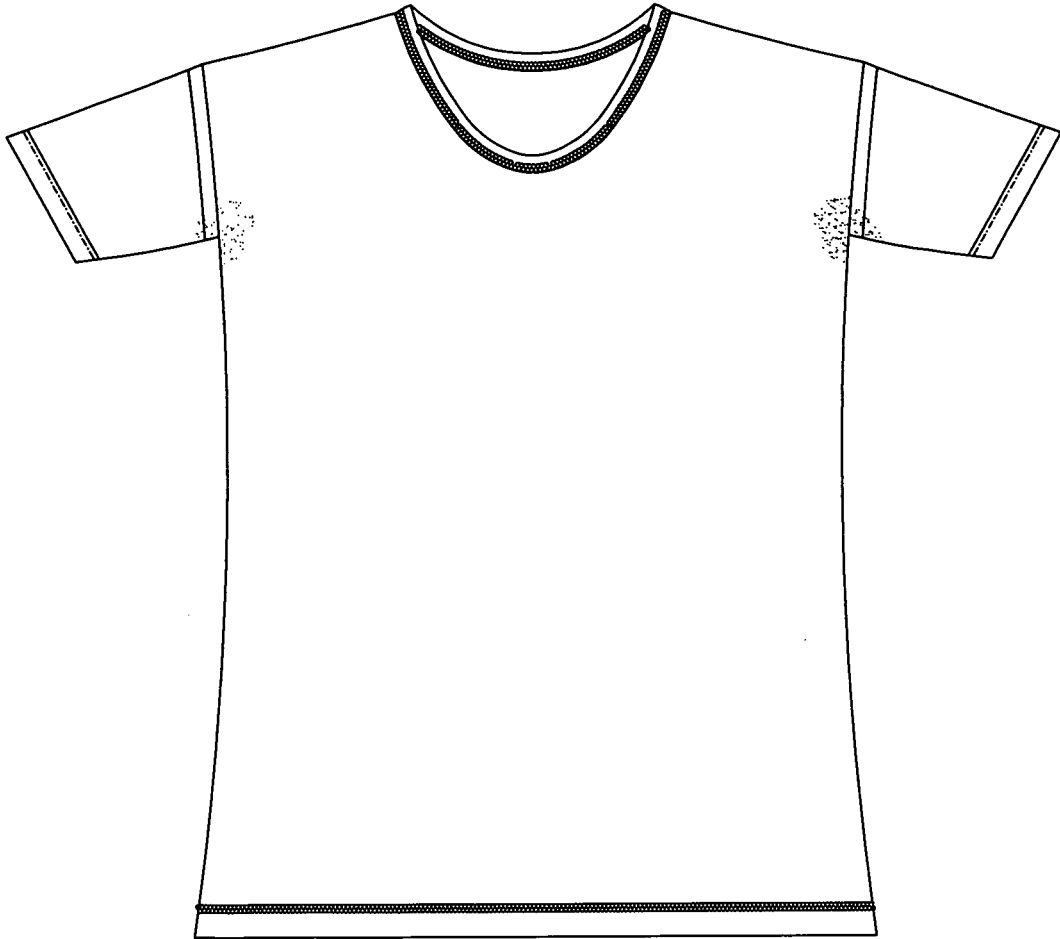


FIG. 1

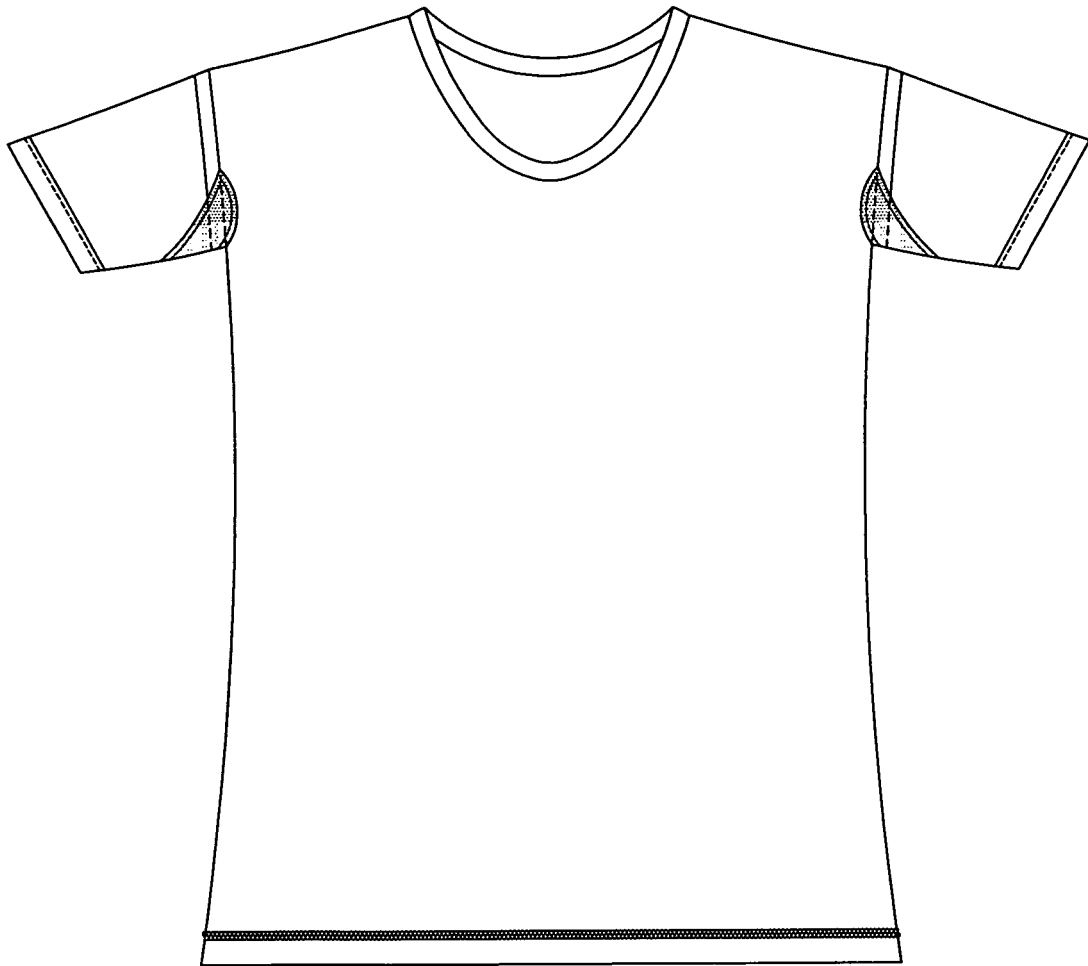


FIG. 2

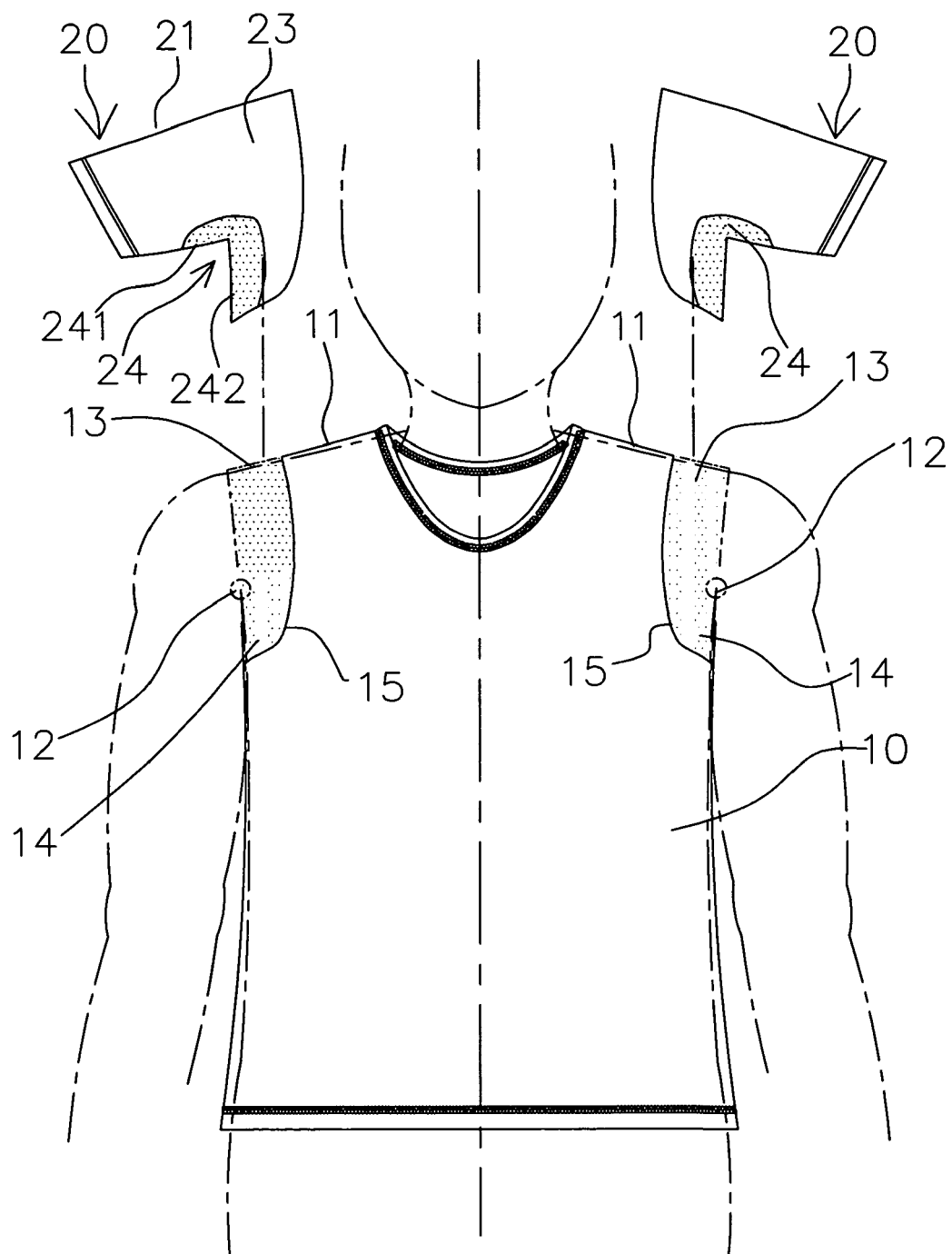


FIG. 3



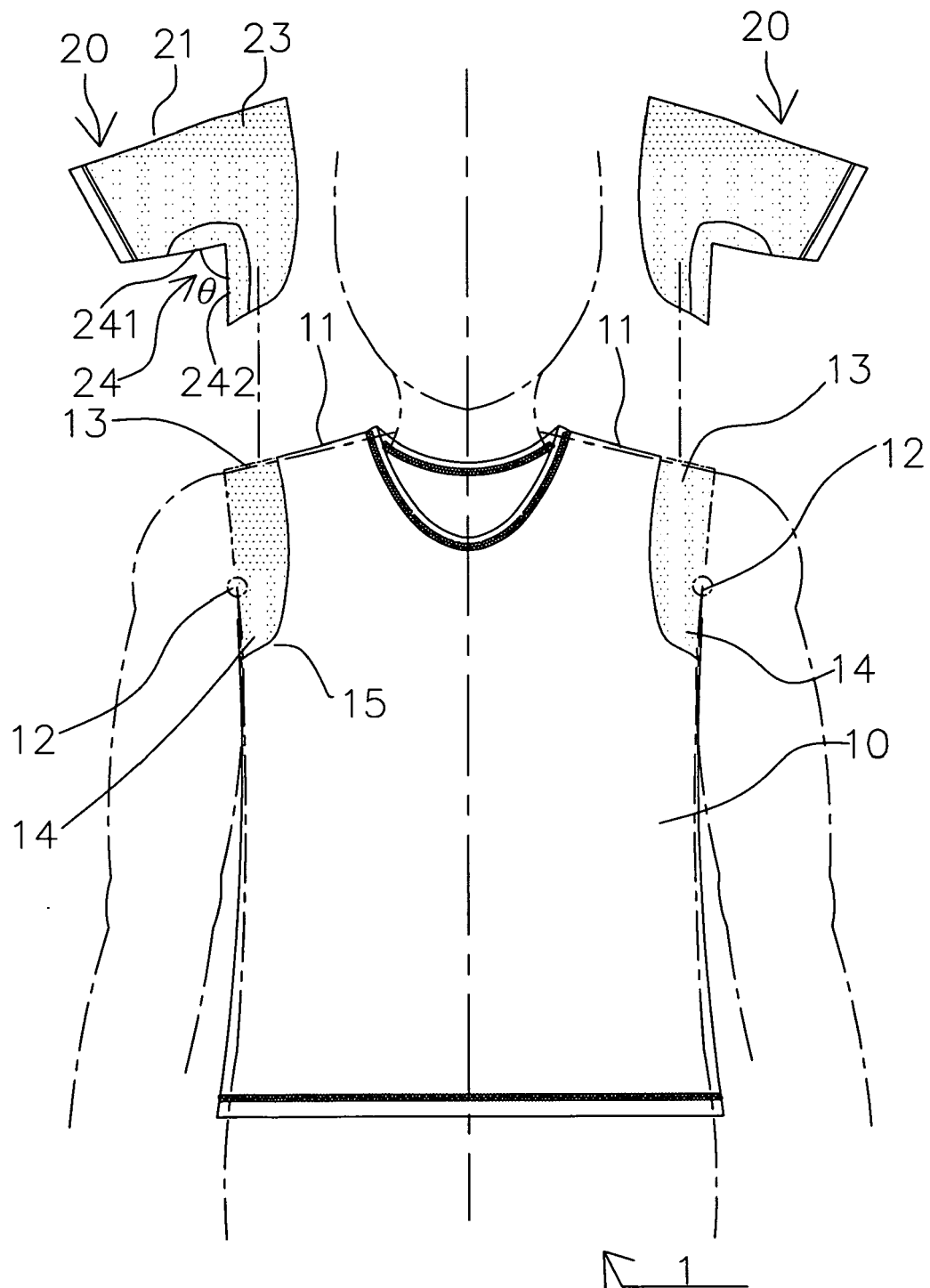


FIG. 4

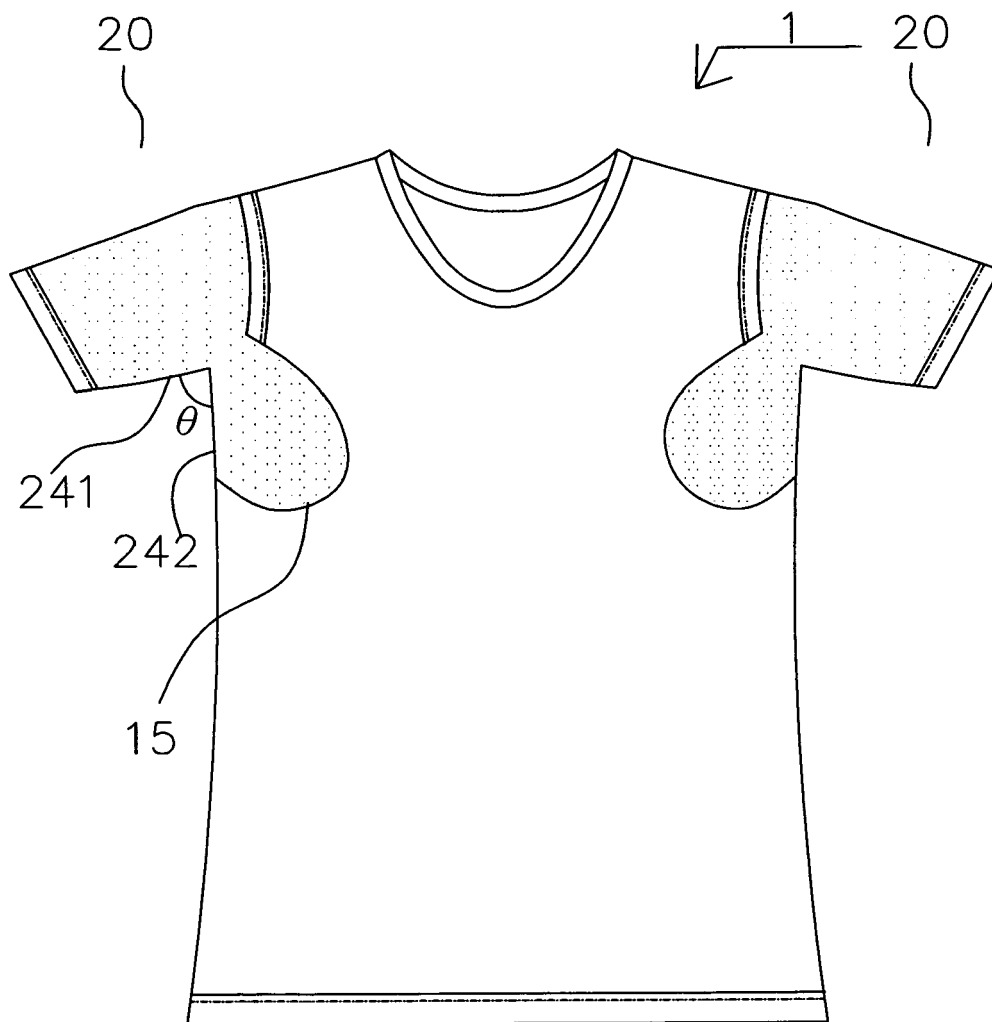


FIG. 5



## EUROPEAN SEARCH REPORT

Application Number  
EP 12 00 4197

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	FR 2 890 536 A1 (PROMILES SA [FR] PROMILES [FR]) 16 March 2007 (2007-03-16)	1,2,4-7, 9,10	INV. A41B9/12
Y	* the whole document *	3,8	A41D27/10 A41D27/13
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X	US 6 282 720 B1 (MAYER JUDY A [US]) 4 September 2001 (2001-09-04)	1,6	
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Y	US 2006/048263 A1 (WALSH KENNETH C [US]) 9 March 2006 (2006-03-09)	3,8	
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			TECHNICAL FIELDS SEARCHED (IPC)
			A41B A41D
The present search report has been drawn up for all claims			
Place of search <b>The Hague</b>		Date of completion of the search <b>8 November 2012</b>	Examiner <b>Debard, Michel</b>
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone  Y : particularly relevant if combined with another document of the same category  A : technological background  O : non-written disclosure  P : intermediate document</p> <p>T : theory or principle underlying the invention  E : earlier patent document, but published on, or after the filing date  D : document cited in the application  L : document cited for other reasons</p> <p>&amp; : member of the same patent family, corresponding document</p>			

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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 12 00 4197

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The members are as contained in the European Patent Office EDP file on  
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08-11-2012

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82