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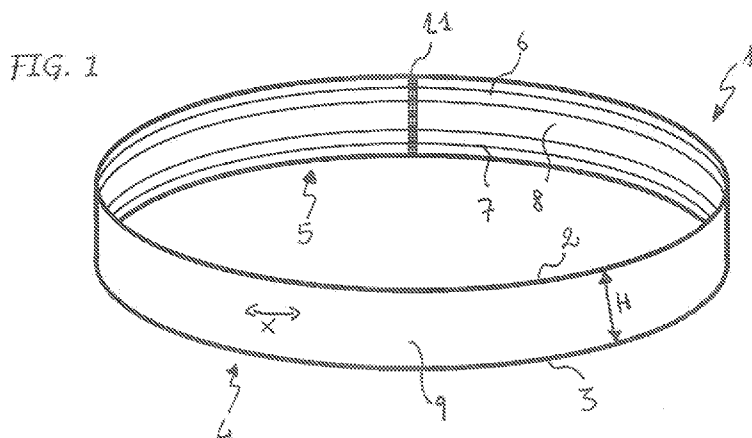
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(54) Title: MEN'S UNDERGARMENT FOR RUNNING AND RELATIVE METHOD OF PRODUCTION



(57) Abstract: A men's undergarment (1) for running or similar sports and a relative method of production are described. The undergarment is worn at least on one section of the chest, for covering at least the zone comprising the nipples of a user, and comprises at least one protection band (9) having an upper edge (2) and a lower edge (3). In its inner surface (5) to be worn into contact with the skin of the user, the undergarment comprises first non-slip means (6) and second non-slip means (7) respectively at or near at least sections of said upper edge (2) and said lower edge (3) and at least one intermediate portion (8) to cover the nipples of the user.



MEN'S UNDERGARMENT FOR RUNNING AND RELATIVE METHOD OF
PRODUCTION

DESCRIPTION

5 Field of the Invention

The present invention concerns the field of sport garments and especially concerns a protective undergarment, especially for running or similar sports. The term running is to be understood as the practice of on-foot activities in general, running, jogging or walking.

10 State of the art

Technical shirts used for running and on-foot activities in general are known, and are especially characterized for the fabrics with which they are made and for their cut, which must ensure a comfortable fit.

15 In particular, such shirts are usually made of breathable fabrics, to ensure optimal comfort to the athlete while running. Such fabrics are generally made of synthetic fibers and have the function of ensuring that the moisture of the body goes through the shirt and is not restrained, thus decreasing the condensation of sweat and increasing the comfort of the garment.

20 Moreover, such shirts have a cut, i.e. a shape, that must not be too adherent to the chest of the user, in order to ensure ease of movement and to avoid annoyances, as well as to favor the breathability.

25 Disadvantageously, however, such shirts, especially during the practice of sports activities that are particularly prolonged over time, such as running, walking or the like, can be the source of irritations, especially for male users, as a result of both for the type of fabric and cut.

In fact, it is found that the rubbing of the fabric of the shirt, wet with sweat, against the sensitive zones of the body and especially against the nipples, which are in direct contact with the shirt, causes irritations and redness on the skin; even assiduous runners are frequently subject to abrasions which
30 can lead to bleeding phenomena of the sections subject to rubbing against the

shirt and especially of the nipples. This is due to the fact that the shirt moves while running, continuously rubbing the chest and in particular the nipples of the user, thus irritating the skin.

Today, those who suffer from this try to prevent the onset of such
5 irritation, also defined as the jogger's nipple, by greasing the nipples and the zone around them by using plant-based oils or Vaseline. In alternative, band-aids are used to protect the concerned zone.

However, such solutions are not always sufficient or effective, especially
10 when increasing the duration of the sports activities as a result of sweat, which can neutralize the effects of ointments, or cause band-aids to come off.

Shirts incorporated with an inner protection band to be worn at the chest of the user, and specifically at the nipples for protecting them, have also been suggested.

For example, the Chinese utility models n. CN 205 125 109 U and CN
15 205 125 119 U describe a sports garment in the form of a shirt. In its inner portion, corresponding to the chest of the shirt body, the sports garment comprises a chest band which covers the chest and which is provided with a fastening portion on both of its side ends for fastening to the body of the user.

However, such solution has countless disadvantages. First of all, the
20 chest band being combined with the shirt, there is a risk that it can move during the sports activities, following the arm movements of the user, thus rubbing and irritating the nipples. Moreover, always as a result of the movements, the chest band could move from the desired position, thus not carrying out its task. Moreover, when participating at sports events, users often prefer to wear shirts
25 connected to the event to which they are participating or to the sports teams to which they belong; thus a garment of the above described type is not always usable or anyhow considerably limits the possibility of choosing. Moreover, since a walker can use different types of shirts depending on the climate, season or type of run to be done, the solution suggested by the documents
30 mentioned above involves having a set of shirts, each provided with a

respective protection band for protecting the nipples, with an increase in costs.

Summary of the Invention

An object of the present invention is to provide a garment, especially for men, for running and which solves the drawbacks of the known art, thus
5 allowing to prevent irritating the nipples of an athlete during on-foot activities.

A further object is to provide a garment that remains stable in the desired position, despite arm and body movements of the user during on-foot activities.

A further object is to provide a garment that is comfortable, breathable and simple and economic to make.

10 Yet a further object is to provide a garment that can be worn with any type of sports garment, in particular shirts, t-shirts and the like, and which also allows to easily change the sports garment while using it.

These and further objects are achieved by a protective undergarment for running and similar according to claim 1 to be worn only on an upper part of the
15 trunk and in particular only on one portion of the chest and possibly of the back of a user, which comprises at least one protection band to be worn on the chest of the user for covering at least his nipples and first and second non-slip means intended to properly and stably restrain each of said protection band against the skin of the user. In particular, the non-slip means comprise at least lengths of a
20 non-slip material, such as rubber and the like, to be positioned above and under at least of the zone comprising the nipples and adapted to exert friction on the skin of the user to prevent the garment from moving despite the user's arm and body movements during the sports activities. In fact, the protection band or the protection bands, if more than one, have the function of covering the skin of the
25 user, especially the most sensitive skin near the nipples and the nipples themselves, so that to prevent the shirt, generally used to run, from rubbing and irritating them or even from causing bleeding. Thanks to such undergarment, the rubbing occurs between two fabrics and, specifically, between the shirt and the undergarment itself instead of between the skin and garment. Moreover,
30 thanks to the non-slip means, the protection band of the undergarment is stably

restrained against the skin of the user, thus preventing it from generating rubbing and consequent irritations. The undergarment is especially provided for male users, but can also be appropriate for female users who wear the shirt directly on the skin, without interposing a bra.

5 Advantageously, such non-slip means are provided near a first edge or upper edge and a second edge or lower edge of each protection band. This configuration ensures that the undergarment remains stable in the desired position despite the movements of the user and that it does not slip down, although not being in any way constrained to the shirt or another sports garment
10 worn by the user.

 Preferably, each protection band further comprises an intermediate portion arranged between the first and second non-slip means, so that the first and second non-slip means are into contact with the user's trunk respectively in an upper position and in a lower position with respect to the zone comprising
15 the nipples, with the intermediate portion into contact at least with the nipples of the user in order to cover and protect them.

 In a preferred solution, the undergarment is provided with a single protection band adapted to cover and protect both of the nipples.

 Still more preferably, the protection band extends along nearly the entire
20 undergarment so as to form a closed ring surrounding a chest section and a corresponding section of the back of the user once its ends have been joined. The ends are joined by joining means which can be in the form of preferably flat seams so as to not be a source of annoyance, or in the form of fabric inserts, hooks, buttons or similar. In other words, the undergarment is tubular and is
25 almost entirely made up of the protection band, except for the joining means. Advantageously, the presence of the non-slip means allows to maintain the undergarment stable without having to tighten it too much on the chest of the user, thus eliminating annoyances and constrictions that could be caused by garments that are too tight.

30 In alternative, the undergarment comprises at least one protection band

that covers at least the nipples and the section comprised in-between them, or at least two protection bands, each for covering a nipple and possibly other protection bands to protect other delicate sections and connecting means combined to the ends of each protection band so that to define an
5 undergarment of a closed-ring shape to be worn on a section of the trunk of the user.

Advantageously, the undergarment has no portion to be worn at the shoulders and the abdominal region of the user, but has only portions to be worn at the part of the chest comprising the nipples and possibly a
10 corresponding part of the back of the user.

The intermediate section can extend at the entire protection band, or only at the nipples or possible other sensitive sections.

The non-slip means can be present along the entire respective upper or lower edge, or only in sections thereof, and are especially present at least at the
15 sections of the undergarment to be worn on the nipples. In fact, it is very important that such sections of the undergarment do not move, but, preferably and for greater efficacy of the undergarment, it is better that the entire protection band remains stable.

Each protection band must have a height such as to cover the entire
20 nipple, but simultaneously and preferably must not have too great of a height, in order to avoid covering too large of a zone and to prevent it from being subjected to undesired movements. Preferably, such height is between 25 mm and 120 mm and more preferably between 45 mm and 70 mm.

Still in order to maintain the undergarment in position despite the
25 movements of the user and the rubbing of the shirt, at least each protection band and preferably also the connecting means are made of an elastic fabric. This way, the undergarment envelops the chest section of the user to which it is combined without compressing it.

Advantageously, the fabric constituting at least each protection band is
30 synthetic and preferably breathable so that to avoid undesired accumulations of

sweat.

Moreover, the fabric of each protection band is smooth and of the same thickness practically throughout the entire protection band itself, or anyhow throughout the section intended to cover the zone of the nipples. This configuration is very important because it prevents the fabric of the protection band from being able to annoy or irritate the skin to which it is combined on one hand, and especially the nipples, and to generate friction with the shirt on the other, thus preventing it from slipping properly or from anyhow wearing it.

Preferably, the first and second non-slip means comprise bands made of a non-slip material, for example a silicone rubber, preferably of the antiallergic type.

The invention further concerns a method according to claim 10 for the production of a men sports undergarment for running and similar sports. The method provides the steps of arranging at least one protection band having an upper edge and a lower edge, and of arranging first and second non-slip means at the level of or near at least lengths of the upper and lower edges on an inner side of the protection band.

Advantageously, at least each protection band or the entire undergarment can be obtained starting from a linear elastic strip of fabric with side siliconing. The siliconing can be continuous throughout the length of the protection band, or sectional, only at sections thereof.

In a particularly preferred solution, the undergarment comprises a single protection band in the form of a linear elastic strip of fabric and the method provides the step of joining the ends of such band by means of a seam, a fabric insert or hooks, Velcro, buttons or the like to define a substantially tubular closed-ring shaped undergarment. The tubular undergarment thus achieved is particularly simple to make and particularly comfortable, having a single joining zone.

In alternative, the undergarment can comprise one or more protection bands in the form of linear elastic strips of fabric and the method provides the

step of joining connecting means at the ends of each strip so that to connect the ends of the protection band to each other, whenever there is only one, or to connect the protection bands to each other in order to define a ring-shaped undergarment adapted to surround a section of the chest and of the back of the user. Such undergarment can have portions having different heights in the cross direction; for example, the protection bands can have a greater height, being intended to cover the nipples, whereas the connecting means can be of lower height and be, for example, in the form of elastic belts, or the like.

Finally, each protection band can comprise an intermediate portion comprised between the non-slip means and especially adapted to cover the nipples of the user and the method can comprise the step of removing sections of said intermediate portion that are not intended to be worn on the nipples, so that to obtain an undergarment that protects there where it is needed, but that is also particularly breathable.

Description of the drawings

Further characteristics and advantages of the invention will be better highlighted by the review of the following detailed description of a preferred, but not exclusive, embodiment illustrated by way of example and without limitations, with the aid of the accompanying drawings, in which:

- figure 1 shows a perspective view of an embodiment of a protective undergarment, especially for running, according to the present invention;

- figures 2a and 2b respectively show an outer view and an inner view of a different embodiment of a protective undergarment according to the present invention;

- figures 3a and 3b respectively show an outer view and an inner view of a further embodiment of a protective undergarment according to the present invention; and

- figure 4 shows a view of the undergarment of figure 1 when worn by a user.

Detailed description of the invention

The figures show a protective undergarment 1 for men for practicing sports activities, and especially running, walking and the like, according to the present invention. In particular, the undergarment 1 is adapted to be worn under a shirt, usually used by a walker, at least on a section of the thorax of a user, at the chest zone, so that to be arranged at and thus cover the nipples of the user himself.

The undergarment 1 is in the form of a strip and has a first edge or upper edge 2 and a second edge or lower edge 3. The words "upper edge" mean the edge that is at a section of the chest of the user that is higher than the zone comprising the nipples, when the undergarment is worn and the user is in a standing position; whereas the words "lower edge" mean the edge of the opposite side of the undergarment with respect to the side of the upper edge and specifically the edge that is at a section of the chest of the user that is lower with respect to the zone comprising the nipples, when the undergarment is worn and the user is in a standing positions.

The undergarment comprises an outer surface 4, which is visible when the undergarment is worn, and an inner surface 5 intended to be worn into contact with the skin of the user.

The inner surface has first non-slip means 6 and second non-slip means 7 combined with or anyhow in proximity respectively of said first and second edges. Such non-slip means comprise portions of a material having friction such as to prevent the undergarment to slip on the skin, in order to stably restrain the undergarment on the desired section of the body of the user. This solution allows to maintain the undergarment in position, although not being in any way constrained to the shirt.

The inner surface further comprises at least one intermediate portion 8 extending between said non-slip means and is sized to, and intended to, come into contact and cover at least the nipples of the user. Preferably, there is a single intermediate portion that covers at least the nipples and the portion of the skin comprised in-between them.

The undergarment can comprise fastening elements such as hooks, buttonholes, Velcro or other and/or can be combined with outer fixing elements so that to be maintained stable in the desired position once positioned on the chest of the user.

5 Advantageously, the undergarment is in closed-ring shape, so that to also surround an upper section of the back of the user. In this case, the undergarment can comprise at least one protection band 9 to at least cover the nipples or the chest zone comprising the nipples - as shown in figures 2a, 2b, 3a and 3b, and connecting means 10 combined with said protection band to
10 restrain it on the body of the user.

In alternative and preferably, the protection band extends along nearly the entire length of the undergarment itself, as shown in figure 1.

The undergarment can be without a seam for its joining, or can have joining means 11. Preferably, such joining means comprise a flat seam, as
15 shown in figures 1, 3a and 3b, or fabric inserts so that such seam is not a source of annoyance when worn. In alternative, the joining means can comprise hooks, buttons, Velcro or the like, so that the undergarment is easier to wear. In the embodiment of figures 2a and 2b, the joining means can be provided at the ends of the connecting means, intended to be joined with the protection band.

20 The first and second non-slip means 6, 7 are provided at least at the zone including the nipples and possibly at the zone comprised in-between them; preferably, however, they are provided at the entire undergarment, possibly excluding the portion comprising the joining means, so that to ensure the proper positioning and to prevent it from moving while running.

25 Advantageously, once worn so that to cover the nipples, the undergarment 1 is advantageously properly maintained against the chest of the user by the first and second non-slip means and thus constitutes a protection for the nipples; in fact, thanks to such undergarment, the shirt is no longer into contact with the nipples of the user, but is into contact with the undergarment
30 itself. While running, the shirt thus slips on the undergarment instead of on the

skin of the user, whom is protected, thus avoiding the formation of irritations. In other words, there is no more rubbing between skin and fabric, since the undergarment 1 stay still, but between the fabric of the shirt and the fabric constituting the undergarment. Thus, when the undergarment is worn, it
5 constitutes a protection for the nipples since it prevents the shirt from rubbing thereon, irritating them.

At least in its transverse direction comprised between the upper edge and the lower edge, the protection band 9 has a total height H of at least 25 mm; such total height is preferably of at least 35 mm and even more preferably
10 of at least 45 mm. Advantageously, the total height H is lower than 120 mm, preferably lower than 90 mm and even more preferably lower than 70 mm, so as not to create excessive encumbrance.

Advantageously, the undergarment is made of a synthetic and breathable fabric so that to ease the slipping of the shirt over the undergarment itself,
15 contemporaneously preventing the formation and accumulation of sweat.

At least each protection band of the undergarment is made of a smooth fabric substantially having an even thickness, so that the outer and inner surfaces are smooth and homogeneous in order to respectively facilitate the slipping between the undergarment and the shirt and to not irritate the skin and,
20 especially, the nipples of the user.

Each protection band 9 and preferably also the connecting means 10 are made of a fabric elastic especially in a longitudinal direction denoted by the arrow X. In fact, such elasticity allows the undergarment to be worn and to remain adherent to the section of the chest of the user. The undergarment can
25 be made in different sizes depending on the body size of the user in order to be used by athletes of different ages and different physical structures.

The first and second non-slip means 6, 7 are made by strips of a non-slip material, for example silicone rubber, preferably of the antiallergic type.

At least each protection band or the protection band, but preferably the
30 entire undergarment, is obtained starting from a strip of linear elastic fabric with

side siliconing. Such siliconing can be continuous, throughout the longitudinal extension of each protection band or of the undergarment, or can be provided only in the zones concerned.

5 In case of an undergarment having a single protection band extending along the entire undergarment, as shown in figures 1, 3a and 3b, the undergarment itself can simply be obtained by joining the two ends of the strip of fabric to each other by sewing, or by combining appropriate joining means therewith.

10 It is also possible to remove sections of intermediate portion that must not come into contact with the nipples, as shown in the embodiment of figures 3a and 3b, so that to obtain a particularly breathable undergarment.

15 In alternative, whenever the undergarment comprises a single protection band extending between and at the nipples, as shown in figures 2a and 2b, or two separate protection bands, each at a respective nipple, and possibly others to protect other sections, it is necessary to prearrange as many strips of linear elastic fabric with side siliconing as the number of protection bands and to combine connecting means 10 at their ends so that to connect a strip to the other, or so that to connect the ends of the same strip, whenever the undergarment comprises a single protection band, and to prearrange possible 20 joining means to obtain a closed-ring shaped undergarment.

25 At least each of the protection band, but preferably the entire undergarment, has a smooth surface, thus without details that can vary the texture and thickness, so that to prevent the fabric of the undergarment from constituting a source of irritation or annoyance for the nipples of the user and so that the shirt slips easily above the undergarment itself, thus preventing the fabric of the shirt from getting entangled and/or from wearing due to the rubbing of its inner surface onto a rough or anyhow processed surface. The undergarment is thus made of a single jersey fabric, preferably of a single jersey elastic fabric.

30

CLAIMS

1. A men's undergarment (1) for running or similar sports, to be worn on one section of the trunk of a user for covering at least the nipples of the user himself, the undergarment being in the form of at least one protection band (9) having an upper edge (2), a lower edge (3) and one or more intermediate portions (8) extending between said upper and lower edges to cover the nipples of the user, wherein, in an inner surface (5) thereof to be worn in contact with the skin of the user, the undergarment comprises first non-slip means (6) and second non-slip means (7), which are intended to come into contact with the skin of the user to stably restrain the undergarment on the section of the body of the user on which it is worn, wherein said first non-slip means (6) and said second non-slip means (7) extend respectively at or near said upper edge and said lower edge, at least at the level of the zone including the nipples, preferably also of the zone comprised between them and even more preferably substantially at the level of the entire upper edge and lower edge of the undergarment.

2. Undergarment (1) according to claim 1, comprising a single protection band extending so that to cover at least the nipples and chest section included in-between them.

3. Undergarment (1) according to claim 1 or 2, wherein the undergarment is close-ring shaped and also surrounds an upper section of the back of the user.

4. Undergarment (1) according to claim 3, wherein the undergarment is in one piece, comprising a single protection band extending along nearly the entire undergarment, or wherein the undergarment comprises at least one protection band (9) and connecting means (10) combined with said at least one protection band, for restraining it against the body of the user.

5. Undergarment (1) according to claim 3 or 4, comprising joining means (11) for its ring closure, said joining means being able to comprise a flat seam, fabric inserts, hooks, buttons or similar.

6. Undergarment (1) according to one of the preceding claims, wherein the protection band (9) has a total height (H) between 25 mm and 120 mm, preferably between 35 mm and 90 mm and still more preferably between 45 mm and 70 mm in a cross-direction, for covering the nipples of the user without
5 constituting an excessive encumbrance.

7. Undergarment (1) according to one the preceding claims, wherein each protection band (9) and/or any connecting means (10) are made of an elastic fabric, wherein at least each protection band (9) can be made of a synthetic and breathable fabric and wherein at least each protection band (9)
10 has a smooth fabric of the same thickness along the entire protection band.

8. Undergarment (1) according to one of the preceding claims, wherein the first and second non-slip means (6, 7) are made by bands made of a non-slip material, such as rubber, preferably a silicone rubber and still more preferably of the antiallergic type.

15 9. A method for the production for a protective undergarment (1) for running, or similar sports, to be worn at least on one section of the trunk of a user, for covering at least the nipples of the user himself, comprising the steps of:

a) arranging at least one protection band (9) having an upper edge (2)
20 and a lower edge (3) to be each positioned, when the undergarment is being used, transversely to the trunk of the user, at a section of the chest of the user adjacent to the zone comprising the nipples, but on opposite sections with respect to each other;

b) arranging first non-slip means (6) and second non-slip means (7) at
25 the level of or near at least sections of said upper edge (2) and of said lower edge (3), comprising at least portions made of a material adapted to exert friction on the skin of the user in order to stably restrain the undergarment on the section of the body to which it is combined, in an inner surface (5) of the undergarment to be worn in contact with the skin of the user, at least at the
30 protection band.

10. Method for the production of an undergarment (1) according to claim 9, wherein at least each of the protection bands, but preferably the entire undergarment, is obtained from a strip of linear elastic fabric with side siliconing, said siliconing being continuous or sectional.

5 11. Method for the production of an undergarment (1) according to claim 9 or 10, wherein the undergarment is closed-ring shaped for also surrounding an upper section of the back of the user and wherein the undergarment is in one piece, comprising a single protection band extending along the entire undergarment and wherein the method provides the further step of sewing the
10 two ends of the protection band to each other by means of a flat seam or of combining said ends with joining means (11), said joining means being able to comprise fabric inserts, hooks, buttons or similar.

12. Method for the production of an undergarment (1) according to claim 9 or 10, wherein the undergarment is closed-ring shaped for also surrounding
15 an upper section of the back of the user, wherein the undergarment comprises at least one protection band (9) and wherein the method provides a further step of combining connecting means (10) with the ends of said at least one protection band, by means of flat seam and/or joining means (11) in the form of hooks, buttons or similar, for restraining said at least one protection band on the
20 body of the user.

13. Method for the production of an undergarment (1) according to one of claims 9-12, wherein the undergarment comprises a single protection band and wherein the further step of removing sections of an intermediate portion (8) comprised between the first non-slip means (6) and the second non-slip means
25 (7) is provided, said sections are being intended not to come into contact with the nipples of the user.

1/2

FIG. 1

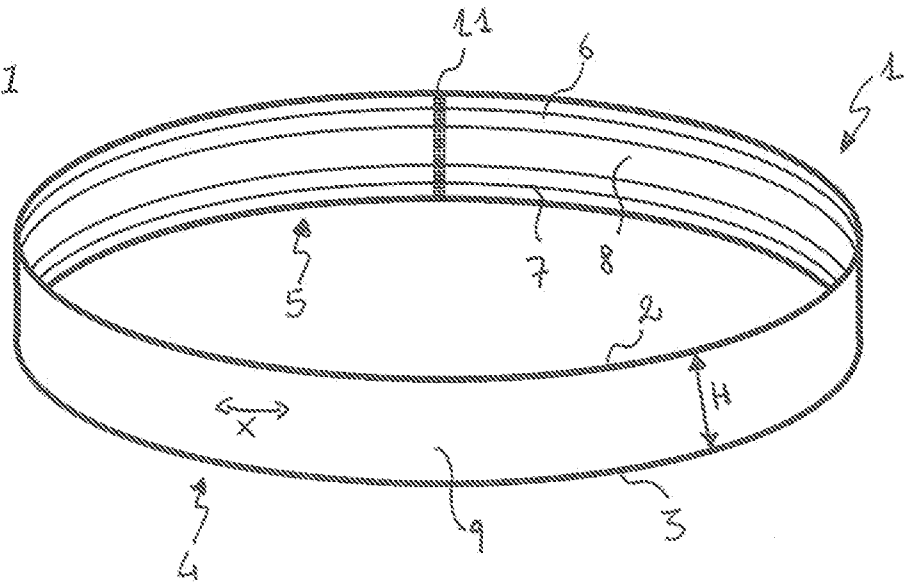


FIG. 4

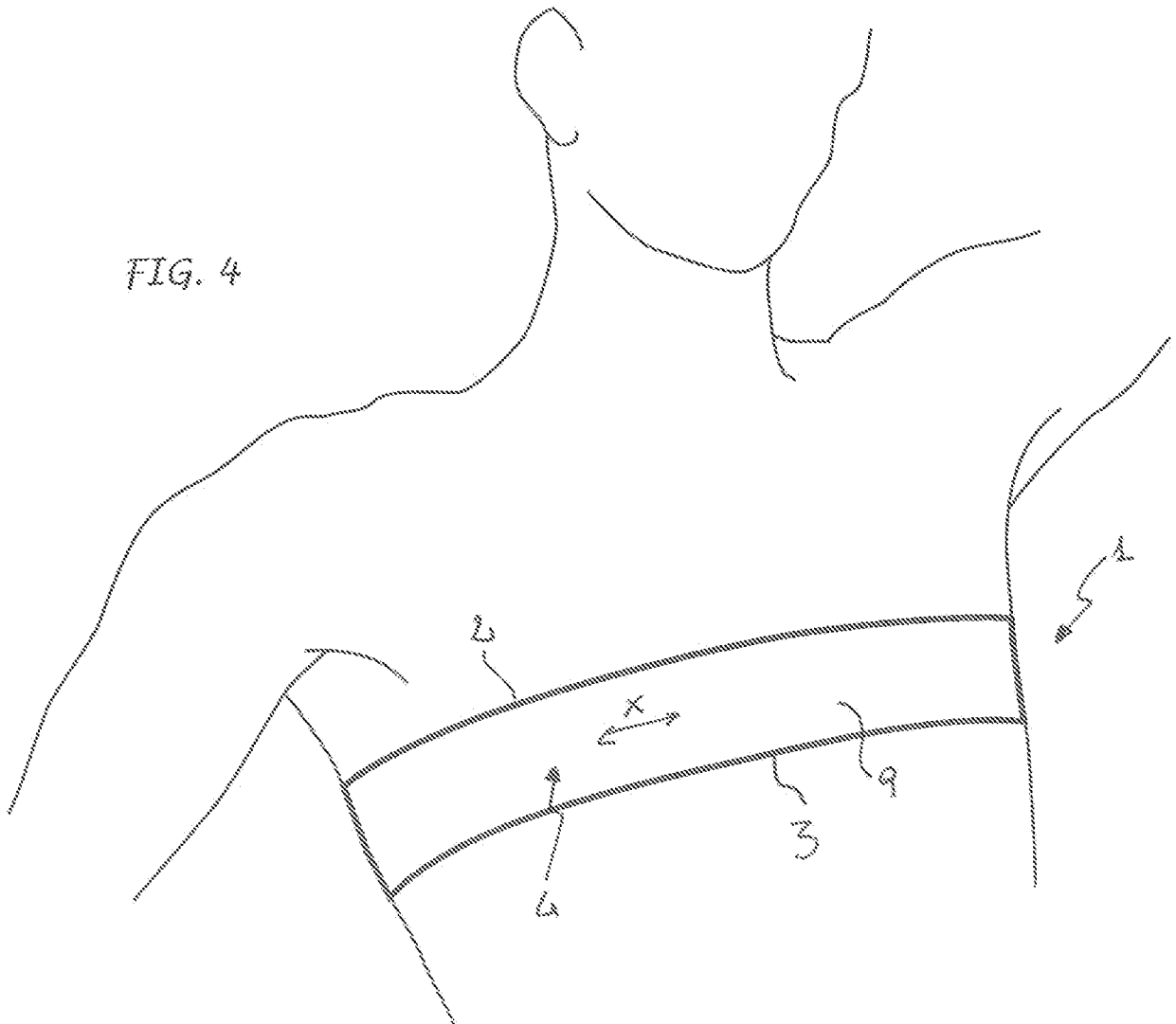


FIG. 2a

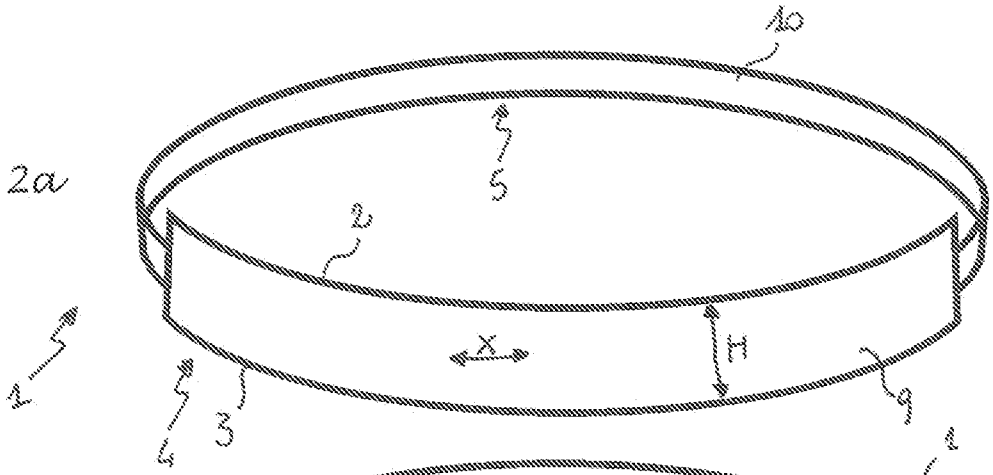


FIG. 2b

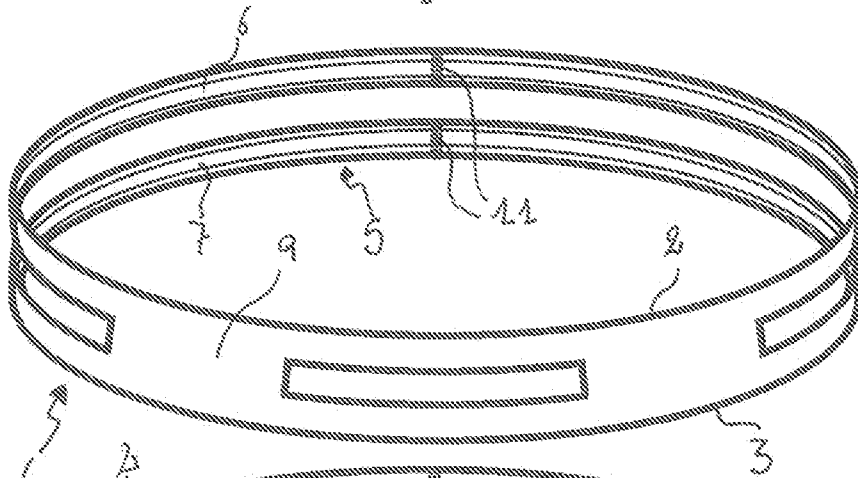
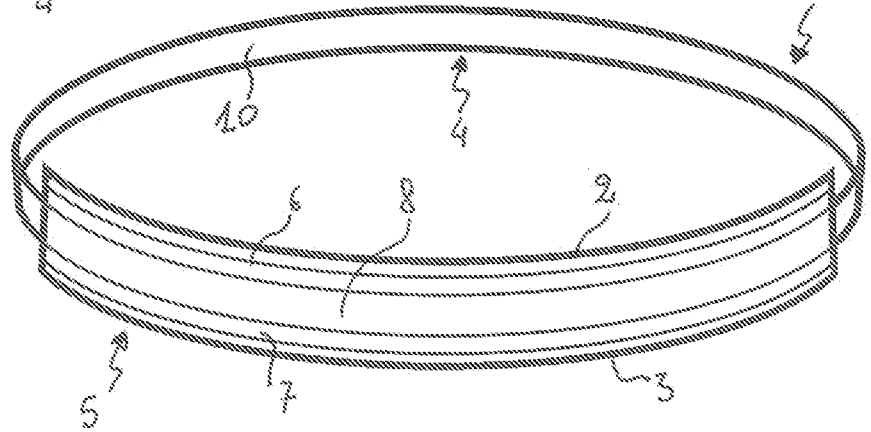


FIG. 3a

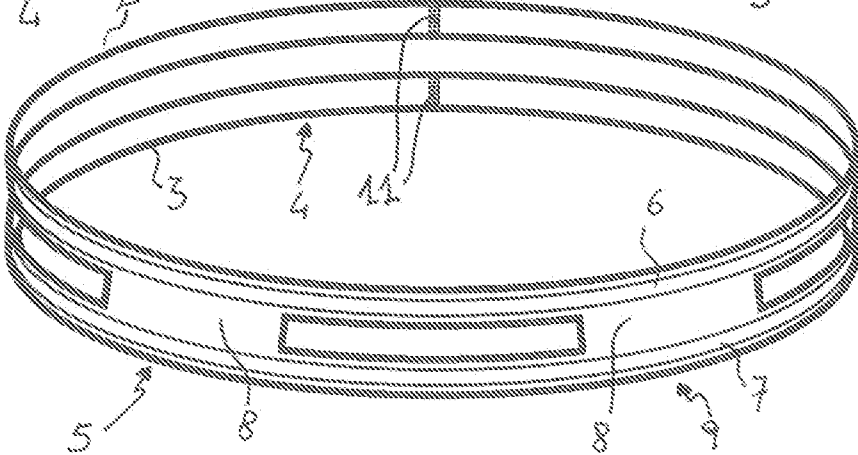


FIG. 3b

INTERNATIONAL SEARCH REPORT

International application No
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A. CLASSIFICATION OF SUBJECT MATTER
INV. A41D13/05 A41B9/12
ADD.

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)
A41D A41B

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

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

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2011/230119 A1 (THOMPSON STEPHEN W [US]) 22 September 2011 (2011-09-22) abstract; claims 1, 4, 8, 9, 11, 12; figures 1, 2	1-13
X	----- CN 205 125 109 U (ZHEJIANG BEEDU GARMENTS CO LTD) 6 April 2016 (2016-04-06) abstract; figures 2, 3, 4, 5	1-13
X	----- CN 205 125 119 U (ZHEJIANG BEEDU GARMENTS CO LTD) 6 April 2016 (2016-04-06) abstract; figures 1-4	1-13
A	----- US 2014/068833 A1 (ABASOVA GULNARA [US] ET AL) 13 March 2014 (2014-03-13) abstract; figures 1-3	1-3,9

Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents :

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Date of the actual completion of the international search

1 November 2019

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/IB2019/057857

Patent document cited in search report	Publication date	Patent family member(s)	Publication date	
US 2011230119	A1	22-09-2011	US 2011230119 A1	22-09-2011
			US 2013298303 A1	14-11-2013
			WO 2011116172 A1	22-09-2011

CN 205125109	U	06-04-2016	NONE	

CN 205125119	U	06-04-2016	NONE	

US 2014068833	A1	13-03-2014	NONE	
