

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(10) International Publication Number
WO 2024/254018 A1

(43) International Publication Date
12 December 2024 (12.12.2024)

(51) International Patent Classification:

A41B 9/02 (2006.01) A41B 9/14 (2006.01)
A41B 9/12 (2006.01) A41B 7/00 (2006.01)

(21) International Application Number:

PCT/US2024/032323

(22) International Filing Date:

03 June 2024 (03.06.2024)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/471,166 05 June 2023 (05.06.2023) US

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(81) Designated States (unless otherwise indicated, for every

kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CV, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, MG, MK, MN, MU, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH,

TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every

kind of regional protection available): ARIPO (BW, CV, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SC, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, ME, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Published:

— with international search report (Art. 21(3))

(54) Title: GARMENT WITH ELASTIC BANDS AND LEG REGIONS

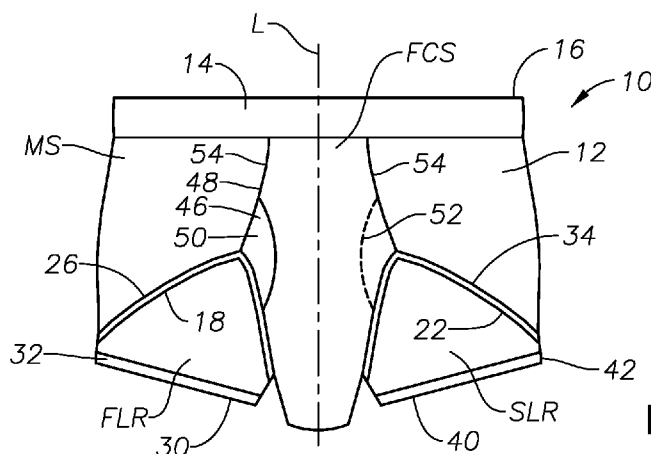


FIG. 5

(57) Abstract: A garment having a body portion with a waistband, first and second leg orifices formed at a lower end of the body portion, a spacing portion between the first leg orifice and the second leg orifice, a first elastic band disposed around the circumference of the first leg orifice, a first leg region extending from the first leg orifice beyond the first elastic band, wherein the first leg region terminates with a first leg opening, a second elastic band disposed around the circumference of the second leg orifice, and a second leg region extending from the second leg orifice beyond the second elastic band, wherein the second leg region terminates with a second leg opening. A garment consisting of a body suit. A method for producing a garment.



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Garment With Elastic Bands and Leg Regions

Field of the Invention

[0001] The present disclosure relates to garments for people, providing superior protection against skin-to-skin contact particularly in the groin region.

Background

[0002] Many people have health and/or physical conditions that cause excessive sweating. The detrimental effects of such conditions are exacerbated in areas of the body where there is natural skin-to-skin contact, such as the groin area or the region of the genitals. Conventional men's and women's garments for the lower torso generally do not provide protection against skin-to-skin contact for the wearer. This is particularly so in the undergarment industry, where such garments are generally produced in two different styles: briefs and boxers. As shown in FIG. 1, conventional briefs 5 do not provide any protection against skin-to-skin contact beyond the leg openings of the garment. The briefs 5 allow for direct skin-to-skin contact between the person's groin area A and the inner thighs and between the thighs B below the groin area. This undesired characteristic is more pronounced with men's briefs as the briefs are generally sized to contain male genitalia, often resulting in spaces or gaps in the material border around the genitals, causing direct skin-to-skin contact. As shown in FIG. 2, conventional boxers 6 allow for greater direct skin-to-skin contact between the person's groin area A and the inner thighs as these garments have an open area in that portion of the garment. Yet it is in the groin area or region of the genitals where people with excessive sweating conditions or other skin issues experience flare-ups (e.g., rashes, irritations, infections, etc.). Thus, a need remains for improved garments for the lower torso.

Summary

[0003] According to an aspect of the invention, a garment has a body portion with a waistband at an upper end, a first leg orifice formed at a lower end of the body portion, a second leg orifice formed at the lower end of the body portion, a spacing portion between the first leg orifice and the second leg orifice, a first elastic band disposed around the entire circumference of the first leg orifice, a first leg region extending from the first leg orifice beyond the first elastic band, wherein the first leg region terminates with a first leg opening, a second elastic band disposed around the entire circumference of the second leg orifice, and a second leg region extending from the second leg orifice beyond the second elastic band, wherein the second leg region terminates with a second leg opening.

[0004] According to another aspect of the invention, a method for making a garment includes producing a body portion having: a waistband at an upper end; a first leg orifice formed at a lower end of the body portion; a second leg orifice formed at the lower end of the body portion; a spacing portion between the first leg orifice and the second leg orifice; a first elastic band disposed around the circumference of the first leg orifice; a first leg region extending from the first leg orifice beyond the first elastic band, wherein the first leg region terminates with a first leg opening; a second elastic band disposed around the circumference of the second leg orifice; and a second leg region extending from the second leg orifice beyond the second elastic band, wherein the second leg region terminates with a second leg opening.

[0005] According to another aspect of the invention, a garment has a body suit with an upper body section and a lower body section. The upper body section is configured with two arm openings and a head opening. The lower body section includes a first leg orifice, a second leg orifice, a spacing portion between the first leg orifice and the second leg orifice; a first elastic band disposed around the entire circumference of the first leg orifice, a first leg region extending from the first leg orifice beyond the first elastic band, wherein the first leg region terminates with a first leg opening, a second elastic band disposed around the entire circumference of the second leg orifice, and a second leg region extending from the second leg orifice beyond the second elastic band, wherein the second leg region terminates with a second leg opening.

Brief Description of the Drawings

[0006] The following figures form part of the present specification and are included to further demonstrate certain aspects of the present disclosure and should not be used to limit or define the claimed subject matter. A more complete understanding of the disclosed embodiments and further features and advantages thereof may be acquired by referring to the following description taken in conjunction with the accompanying drawings, in which like reference numerals may identify like elements, wherein:

[0007] FIG. 1 shows a person facing forward (out of the page) wearing conventional briefs.

[0008] FIG. 2 shows a person facing forward wearing conventional boxers.

[0009] FIG. 3 shows a garment according to an example of the present disclosure.

[0010] FIG. 4 shows a person facing forward wearing a garment embodiment according to an example of the present disclosure.

- [0011] FIG. 5 shows another garment according to an example of the present disclosure.
- [0012] FIG. 6 shows another garment according to an example of the present disclosure.
- [0013] FIG. 7 shows a detail of the elastic band section marked 7 in FIG. 6.
- [0014] FIG. 8 shows a side view cross-section of a garment junction according to an example of the present disclosure.
- [0015] FIG. 9 shows a detail of the elastic band section marked 9 in FIG. 6.
- [0016] FIG. 10 shows another garment according to an example of the present disclosure.
- [0017] FIG. 11 shows a person facing forward with another garment according to an example of the present disclosure.

Detailed Description

[0018] The foregoing description of the figures is provided for the convenience of the reader. The following detailed description of exemplary embodiments, read in conjunction with the accompanying drawings, is merely illustrative and is not to be taken as limiting the scope of the invention. The figures are not necessarily drawn to scale, and certain features may be shown exaggerated in scale or in generalized or schematic form, in the interest of clarity and conciseness.

[0019] FIG. 3 shows a garment 10 embodiment of this disclosure. The garment 10 is neither a brief nor a boxer. A body portion 12 has an elastic waistband 14 at an upper end 16 thereof. A first leg orifice 18 is formed at a lower end 20 of the body portion 12. A second leg orifice 22 is also formed at the lower end 20 of the body portion 12. A spacing portion 24 is formed between the first leg orifice 18 and the second leg orifice 22. A first elastic band 26 is implemented around the full circumference of the first leg orifice 18. A first leg region 28 extends from the first leg orifice 18 beyond the first elastic band 26. The first leg region 28 terminates with a first leg opening 30. In some embodiments, a first terminating elastic band 32 is implemented around the full circumference of the first leg opening 30 of the first leg region 28. A second elastic band 34 is implemented around the full circumference of the second leg orifice 22. A second leg region 36 extends from the second leg orifice 22 beyond the second elastic band 34. The second leg region 36 terminates with a second leg opening 40. In some embodiments, a second terminating elastic band 42 is implemented around the full circumference of the second leg opening 40 of the second leg region 36.

[0020] As shown in FIG. 3, embodiments may also be implemented with a front portion 44 of the body portion 12 configured to form a pouch. The front pouch portion 44 provides a “cupping”

feature (particularly suitable for male genitalia). FIG. 3 also shows an embodiment with a pass-through 46 formed at a front portion 44 of the body portion 12. The pass-through 46 may be formed by a double-layered panel 48 on the front portion 44 of the garment 10. The front or exterior surface of the double-layered panel 48 is configured with a pass through cutaway or opening 50 and the rear or interior surface of the panel 48 is configured with a corresponding pass through cutaway or opening 52 on the opposite side. It will be appreciated that garment 10 embodiments may be implemented with a pass-through 46 formed via different ways as known in the art. It will also be appreciated that garment 10 embodiments may also be implemented without a pass-through, wherein the front portion 44 is formed as a single layer of fabric or double layered without any pass-through openings (see FIG. 6).

[0021] FIG. 4 shows a garment 10 embodiment of this disclosure. Compared to conventional briefs 5 (FIG. 1) and conventional boxers 6 (FIG. 2), the garment 10 prevents direct-to-skin contact between the person's groin area A and the inner thighs and between the thighs B below the groin area. This is achieved by respective placement of the first and second elastic bands 26, 34 around the circumference at the first and second leg orifices 18, 22 (FIGS. 3, 5, 6, 10, 11), which securely snug the fabric around the groin area and the upper thighs. The extensions of the first and second leg regions 28, 36 ensure there is no direct skin-to-skin contact between the thighs B below the groin area, as the upper thighs are respectively sheathed by the leg regions. The terminating elastic bands 32, 42 respectively ensure the leg regions 28, 36 do not bunch up into the user's crotch.

[0022] FIG. 5 shows a front plan view of another garment 10 embodiment of this disclosure. In some embodiments, the body portion 12 may be implemented in multiple panels or sections joined together via stitching. A front central section FCS is joined to a main section MS via stitching 54 running along both sides of the front central section along a longitudinal axis L of the garment 10. At the upper end 16 of the garment 10, an elastic waistband 14 is stitched around the circumference of the main section MS.

[0023] A first elastic band 26 is stitched around the circumference of a first leg orifice 18. A first leg region FLR (28 in FIG. 3) is also stitched around the circumference of the first leg orifice 18. The first leg region FLR terminates with a first leg opening 30 and an elastic band 32 is configured around the circumference of the FLR opening 30. A second elastic band 34 is stitched around the circumference of a second leg orifice 22. A second leg region SLR (36 in FIG. 3) is also stitched around the circumference of the second leg orifice 22. The second leg region SLR

terminates with a second leg opening 40 and an elastic band 42 is configured around the circumference of the SLR opening 40.

[0024] Some garment 10 embodiments may be implemented with the first leg region FLR and the second leg region SLR each respectively extending from the first leg orifice 18 and the second leg orifice 22 at a length from the waistband 14 greater than the body portion 12 along a longitudinal axis L, as depicted in FIG. 3. Other embodiments may be implemented with the first leg region FLR and the second leg region SLR each respectively extending from the first leg orifice 18 and the second leg orifice 22 at a length from the waistband 14 shorter than the length of the body portion 12 along the longitudinal axis L, as depicted in FIG. 5.

[0025] The garment 10 embodiment of FIG. 5 also shows an embodiment with a pass-through 46 formed at the front central section FCS of the body portion 12. The pass-through 46 may be implemented by forming the front central section FCS as a double-layered panel 48, with the front or exterior surface of the panel configured with a pass through opening 50 and the rear or interior surface of the panel configured with a corresponding pass through opening 52 on the opposite side. The two layers are affixed to the main section MS via the stitching 54 running along both sides of the front central section FCS. The two layers of the FCS are stitched to the waistband 14 at the top end and stitched to the lower end of the main section MS. It will be appreciated that garment 10 embodiments may be implemented with a pass-through 46 formed via different ways as known in the art. It will also be appreciated that garment 10 embodiments may also be implemented without a pass-through, wherein the front central section FCS is formed as a single layer of fabric or double layered without any pass-through openings (see FIG. 6).

[0026] FIG. 6 shows a front view of another garment 10 embodiment of this disclosure. This embodiment does not have a pass-through formed at the front side of the body portion 12. A main section MS is coupled to separate first and second leg regions FLR, SLR. The leg regions FLR, SLR are configured as tubular “sleeves” respectively stitched to the main section MS.

[0027] FIG. 7 shows a blown-up view of the section marked 7 in FIG. 6. As shown in FIG. 7, some embodiments are configured with the top edges E1 of the first and second leg regions FLR, SLR respectively placed abutting against the edges E2 of the first and second leg orifices 18, 22. An elastic band or ribbon 56 is disposed over the edges E1, E2. Useable ribbons 56 include rubber bands, elastic synthetics, and other elastic materials or blends of materials as known in the art. In some garment 10 embodiments, the ribbons 56 may be respectively elongated to cover the full

circumference of the first and second leg orifices 18, 22. In other embodiments, the ribbon 56 may be disposed in multiple segments along the circumference of the first and second leg orifices 18, 22. The ribbon 56 may also vary in width in different embodiments.

[0028] A strip 58 is overlaid atop the ribbon 56 to cover the band and the edges E1, E2 along the circumference of the first and second leg orifices 18, 22. Useable strip 58 materials include elastic materials (e.g. SPANDEX) or blends of materials as known in the art. In some embodiments, the strip 58 is formed of the same material as the main section MS. In some garment 10 embodiments, the ribbon 56 and strip 58 are disposed on the exterior surface of the garment, in others the ribbon/strip are disposed on the interior surface of the garment. In either case, the strip 58 is stitched 60 over to respectively couple the first or second leg region FLR, SLR to the main section MS while retaining the ribbon 56 in position around the circumference of the leg orifice 18, 22. The strip 58 can be stitched onto the garment 10 via any suitable means as known in the art.

[0029] FIG. 8 shows a side view cross-section of the junction between the main section MS and a second leg region SLR of another garment 10 embodiment. In this embodiment, a ribbon 56 and strip 58 combination is disposed at the edges E1, E2, similar to the embodiment shown in FIG. 7. However, in this embodiment a second strip 62 is placed on the opposite side of the junction. The second strip 62 can be identical to the strip 58 covering the ribbon 56. The two strips 58, 62 are stitched 64 together across the junction. Use of the dual strips 58, 62 provides a more secure junction between the first and second leg regions FLR, SLR coupled to the main section MS. As with other embodiments, the ribbon 56 may be disposed on the interior or exterior surface of the garment 10, with the second strip 62 respectively disposed on the opposite surface.

[0030] This combination of ribbon 56 and strip 59 or ribbon 56 and strips 58, 62 disposed at the first and second leg orifices 18, 22 form the first and second elastic bands 26, 34 which maintain the garment 10 securely yet comfortably snugged against the crotch and around the upper thighs of the wearer, eliminating the gaps experienced with conventional garments as previously described with respect to FIGS. 1 and 2. As previously discussed, the avoidance of skin-to-skin contact, particularly in this area of the body, is crucial to people that suffer detrimental health effects due to such contact. It will be understood that the elastic waistband 14, first and second elastic bands 26, 34, and the first and second terminating elastic bands 32, 42 each respectively form a complete circle (see FIGS. 3, 6).

[0031] Returning to FIG. 6, it can be seen how garment 10 embodiments with first and second leg regions FLR, SLR provide additional shielding against skin-to-skin contact in the area between the upper thighs of the wearer (see item B in FIG. 4). In combination with the first and second elastic bands 26, 34, the FLR and SLR provide complete shielding against direct skin-to-skin contact in the body area between the person's groin area (A in FIG. 4) and between the thighs below the groin area (B in FIG. 4).

[0032] FIG. 9 shows a blown-up view of the section marked 9 in FIG. 6. In some garment 10 embodiments, the elastic bands 32, 42 configured around the circumference of the FLR and SLR openings may be implemented by respectively folding over the material 66 around the circumference of the FLR and SLR openings and stitching 68 the folded material in place. In other embodiments, the elastic bands 32, 42 may be configured including an elastic band or ribbon (see 56 in FIG. 7) enclosed by the folded material 66 and stitched in place around the circumference of the FLR and SLR openings 30, 40.

[0033] The disclosed garment 10 embodiments are not to be limited solely to undergarments or exterior-wear apparel, or to any type of attire style (e.g., athletic, sleepwear, underwear, men's, women's, etc.). Embodiments of the garments 10 may be implemented for any use as desired. Any suitable cloth material or fabrics may be used to implement the disclosed garment 10 embodiments. For example, when implemented for undergarment use, the garment 10 may be produced from soft cotton fabrics. Some garment 10 embodiments may be produced from fabric blends (e.g., NYLON, ELASTENE, POLYESTER, SPANDEX, LYCRA, etc.). Some embodiments may be produced with moisture wicking materials (e.g., synthetic fabrics, wool, etc.). Some garment 10 embodiments may also be produced with combinations of fabrics (e.g., moisture wicking fabric for the crotch region, cotton for the body portion, etc.). The waistbands 14 and elastic bands 26, 34, 32, 42 of the embodiments may be implemented on the garments 10 in any manner as known in the art. As with the overall sizing of the garment 10, the waistbands and elastic bands can be implemented in various circumferences and with varying elasticity to meet the waist size and leg girth (e.g., S, M, L, XL, etc.) of the user.

[0034] FIG. 10 shows another garment 10 embodiment of this disclosure. Some embodiments may be implemented with the front portion 44 of the body portion 12 comprising a fabric different from the fabric forming the rest of the body portion. For example, the body portion 12 may consist of one type of fabric (e.g., SPANDEX blend) and the front portion 44 may consist of cotton or a

cotton blend. In some embodiments, the first leg region FLR and the second leg region SLR may each include a section 70 having multi-layer fabric, mesh fabric, moisture wicking material, or compression material. In some embodiments, the spacing portion 24 between the first leg orifice 18 and the second leg orifice 22 may comprise a multi-layer fabric, mesh fabric, or moisture wicking material.

[0035] In yet other embodiments, a garment 10 may be implemented with the FLR, SLR, and the body portion 12 formed as a unitary fabric structure (i.e., the FLR and SLR are formed extending from the body portion without the need to couple the sections to the body portion). In such embodiments, the first and second elastic bands 26, 34 are respectively disposed around the full circumference of the first and second leg orifices 18, 22 at the upper end of each leg region. The elastic bands 26, 34 may be stitched onto the garment 10 in a manner similar to that described with respect to FIG. 7, except without the need to join any edges (E1, E2 in FIG 7) as none exists with such embodiments.

[0036] FIG. 11 shows another embodiment of a garment 10 of this disclosure. In this embodiment the garment 10 consists of a body suit 80 having an upper body section 82 and a lower body section 84. A zipper 86 is disposed on the front of the upper body section 83. The lower body section 84 respectively includes first and second elastic bands 26, 34 disposed on the FLR and SLR. In some embodiments, the garment 10 is formed with the FLR and SLR coupled to the upper body section 82 as disclosed herein. In other embodiments, the garment 10 is formed as a one-piece structure with the first and second elastic bands 26, 34 disposed thereon as disclosed herein. Garment 10 embodiments may be formed of any suitable fabric(s) and the elastic bands 26, 34 may be disposed on the bodysuit via the techniques disclosed herein.

[0037] In light of the principles and example embodiments described and illustrated herein, it will be recognized that the example embodiments can be modified in arrangement and detail without departing from such principles. In view of the wide variety of useful permutations that may be readily derived from the example embodiments described herein, this detailed description is intended to be illustrative only, and should not be taken as limiting the scope of the invention. What is claimed as the invention, therefore, are all implementations that come within the scope of this disclosure, and all equivalents to such implementations.

CLAIMS

What is claimed is:

1. A garment comprising:
 - a body portion with a waistband at an upper end;
 - a first leg orifice formed at a lower end of the body portion;
 - a second leg orifice formed at the lower end of the body portion;
 - a spacing portion between the first leg orifice and the second leg orifice;
 - a first elastic band disposed around the circumference of the first leg orifice;
 - a first leg region extending from the first leg orifice beyond the first elastic band, wherein the first leg region terminates with a first leg opening;
 - a second elastic band disposed around the circumference of the second leg orifice; and
 - a second leg region extending from the second leg orifice beyond the second elastic band, wherein the second leg region terminates with a second leg opening.
2. The garment of claim 1 further comprising a pass-through formed at a front portion of the body portion.
3. The garment of claim 2 wherein the front portion of the body portion comprises a section configured to form a pouch.
4. The garment of claim 1 wherein the first elastic band and the second elastic band each comprise a ribbon.
5. The garment of claim 4 wherein the first elastic band and the second elastic band each comprise a strip overlaid atop the ribbon.
6. The garment of claim 5 wherein each strip is stitched to respectively couple the first leg region and the second leg region to the body portion.

7. The garment of claim 6 wherein the first elastic band and the second elastic band each comprise a second strip disposed on the garment opposite the strip overlaid atop the ribbon.
8. The garment of claim 1 wherein a front portion of the body portion comprises a fabric different from the fabric forming the rest of the body portion.
9. The garment of claim 1 wherein the first leg region and the second leg region each comprise a section having multi-layer fabric, mesh fabric, or moisture wicking material.
10. The garment of claim 1 wherein the spacing portion between the first leg orifice and the second leg orifice comprises a section having multi-layer fabric, mesh fabric, or moisture wicking material.
11. The garment of claim 1 further comprising a first terminating elastic band disposed around the circumference of the first leg opening of the first leg region, and a second terminating elastic band disposed around the circumference of the second leg opening of the second leg region.
12. The garment of claim 1 wherein the body portion, the first leg region, and the second leg region each comprise compression material.
13. The garment of claim 1 wherein the first leg region and the second leg region each respectively extend from the first leg orifice and the second leg orifice at a length shorter than the longitudinal length of the body portion.
14. The garment of claim 1 wherein the first leg region and the second leg region each respectively extend from the first leg orifice and the second leg orifice at a length greater than the longitudinal length of the body portion.

15. A garment comprising:
 - a body suit having an upper body section and a lower body section;
 - the upper body section configured with two arm openings and a head opening;
 - the lower body section comprising:
 - a first leg orifice;
 - a second leg orifice;
 - a first elastic band disposed around the circumference of the first leg orifice;
 - a first leg region extending from the first leg orifice beyond the first elastic band, wherein the first leg region terminates with a first leg opening;
 - a second elastic band disposed around the circumference of the second leg orifice; and
 - a second leg region extending from the second leg orifice beyond the second elastic band,
 - wherein the second leg region terminates with a second leg opening.
16. The garment of claim 15 wherein the first elastic band and the second elastic band each comprise a ribbon.
17. The garment of claim 16 wherein the first elastic band and the second elastic band each comprise a strip overlaid atop the ribbon.
18. The garment of claim 17 wherein the first elastic band and the second elastic band each comprise a second strip disposed on the garment opposite the strip overlaid atop the ribbon.
19. A method for making a garment, comprising:
 - producing a body portion having:
 - a first leg orifice formed at a lower end of the body portion;
 - a second leg orifice formed at the lower end of the body portion;
 - a spacing portion between the first leg orifice and the second leg orifice;
 - a first elastic band disposed around the circumference of the first leg orifice;
 - a first leg region extending from the first leg orifice beyond the first elastic band, wherein the first leg region terminates with a first leg opening;

- a second elastic band disposed around the circumference of the second leg orifice;
and
a second leg region extending from the second leg orifice beyond the second elastic band,
wherein the second leg region terminates with a second leg opening.
20. The method of claim 19, wherein the garment consists of a body suit having an upper body section and a lower body section, with the upper body section configured with two arm openings and a head opening, and the lower body section comprises the body portion.

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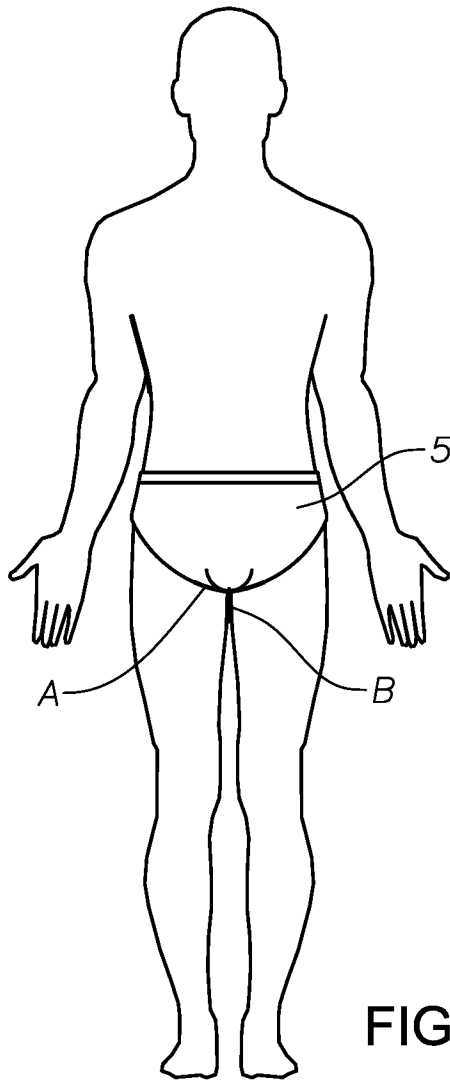


FIG. 1

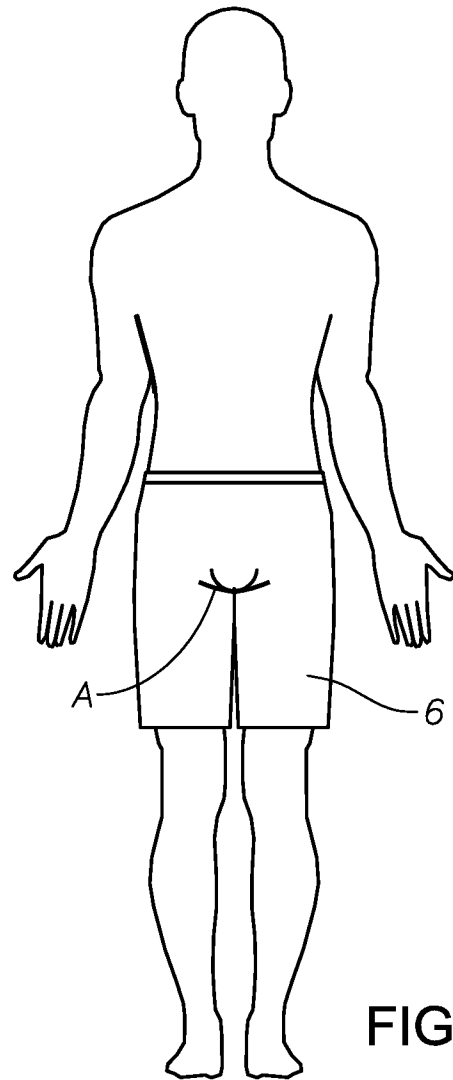


FIG. 2

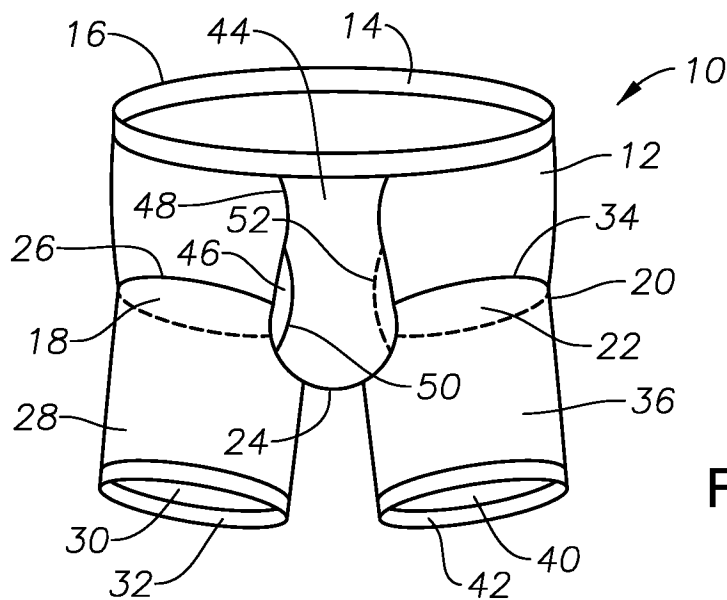


FIG. 3

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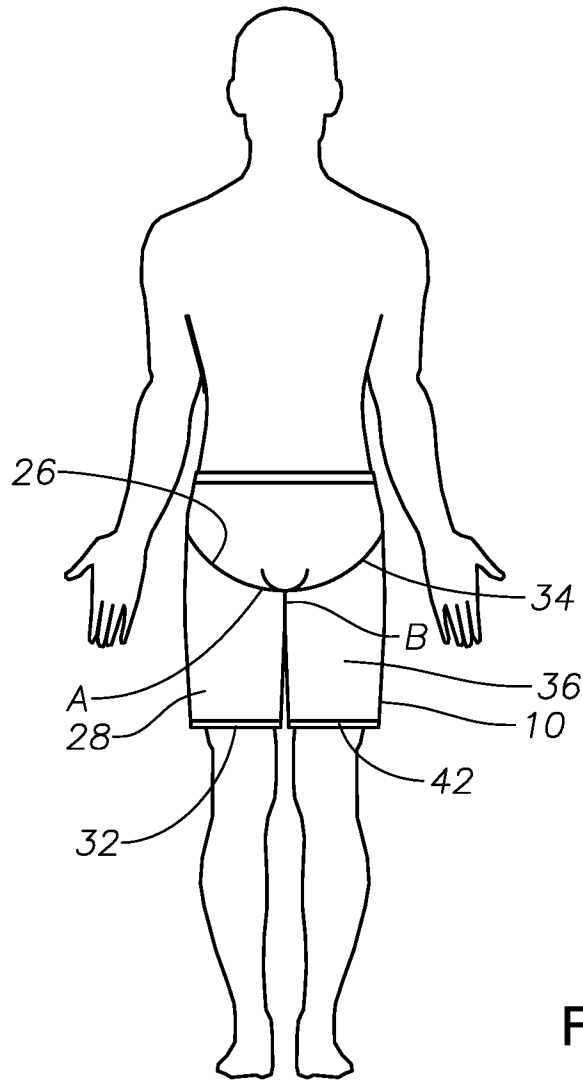


FIG. 4

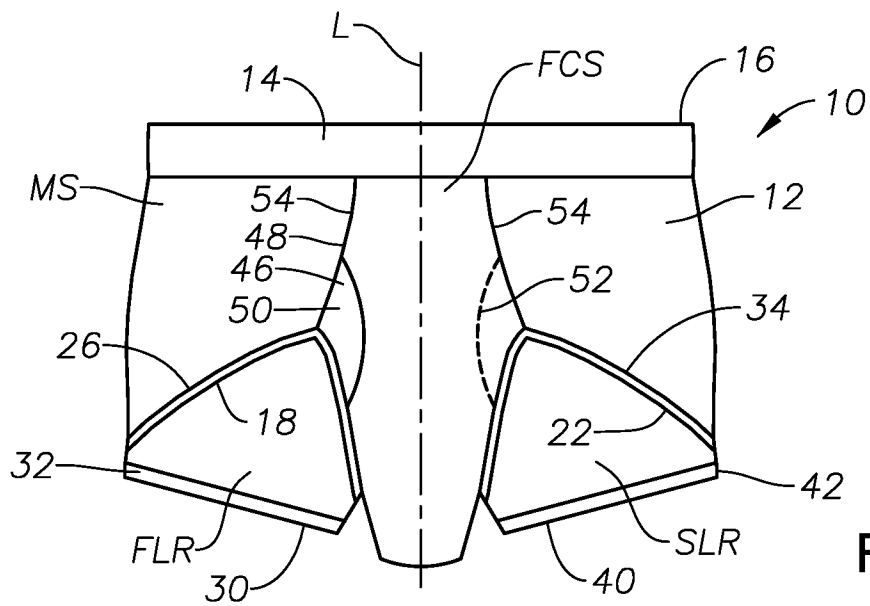


FIG. 5

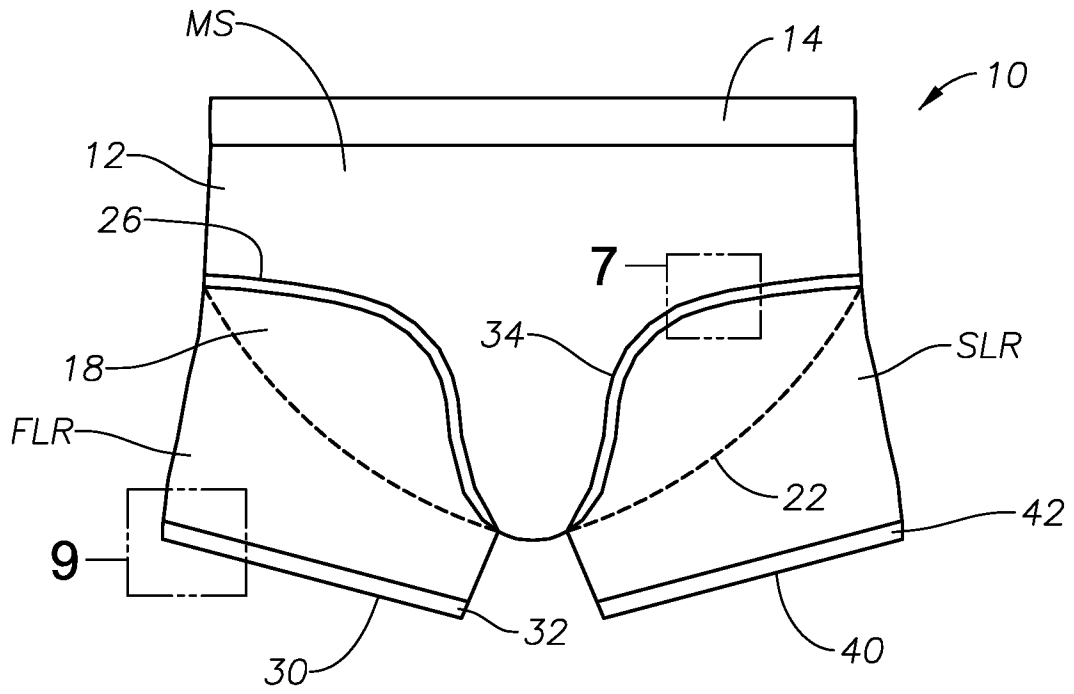


FIG. 6

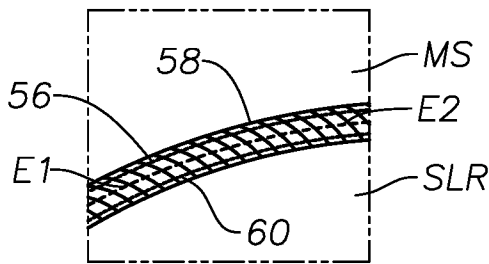


FIG. 7

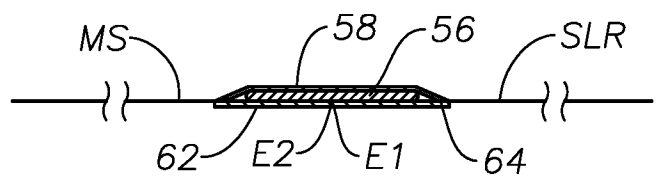


FIG. 8

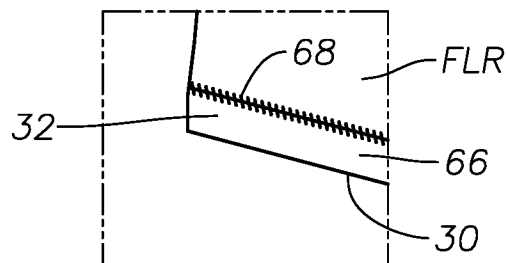


FIG. 9

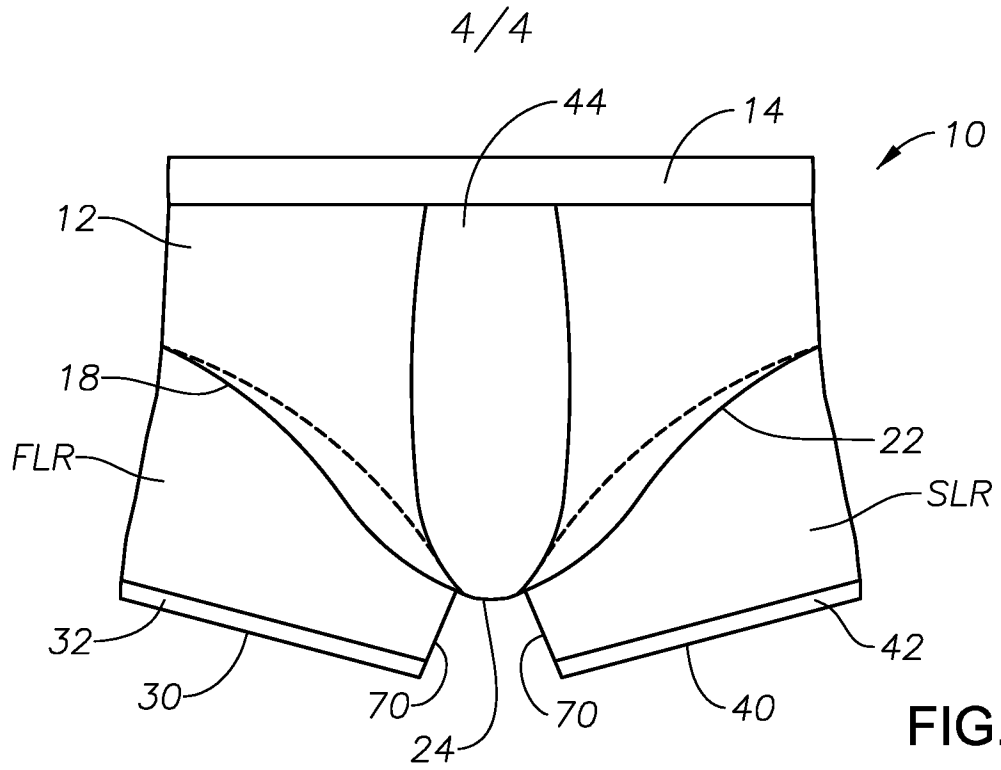


FIG. 10

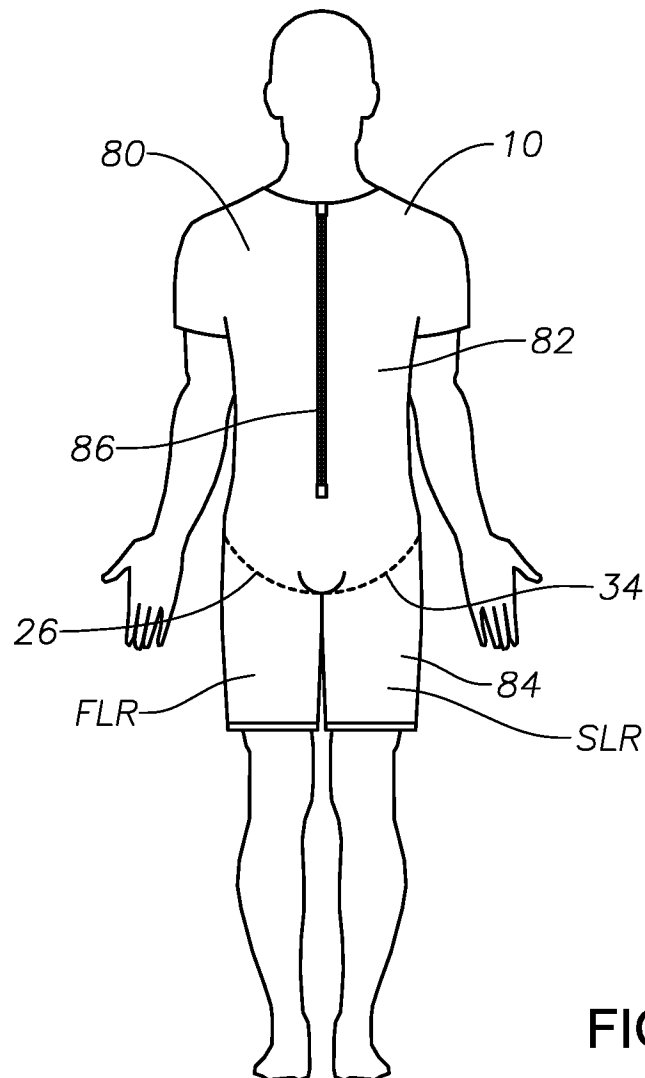


FIG. 11

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2024/032323

A. CLASSIFICATION OF SUBJECT MATTER		
IPC: A41B 9/02 (2024.01); A41B 9/12 (2024.01); A41B 9/14 (2024.01); A41B 7/00 (2024.01) CPC: A41B 9/02 ; A41B 7/00 ; A41B 9/12 ; A41B 9/14		
According to International Patent Classification (IPC) or to both national classification and IPC		
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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched See Search History Document		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) See Search History Document		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,103,501 A (MEISELS) 14 April 1992 (14.04.1992) entire document	1-4, 9-15, 19, 20
Y	entire document	5-8, 16-18
Y	US 2,511,080 A (ROSENBAUM) 13 June 1950 (13.06.1950) entire document	5-7, 16-18
Y	US 2,255,931 A (KLOSTER) 16 September 1941 (16.09.1941) entire document	8
A	US 2012/0204325 A1 (TODD) 16 August 2012 (16.08.2012) entire document	1-20
A	US 2014/0041097 A1 (TORATANI CO. LTD.) 13 February 2014 (13.02.2014) entire document	1-20
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.		
<p>* Special categories of cited documents:</p> <p>“A” document defining the general state of the art which is not considered to be of particular relevance</p> <p>“D” document cited by the applicant in the international application</p> <p>“E” earlier application or patent but published on or after the international filing date</p> <p>“L” document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>“O” document referring to an oral disclosure, use, exhibition or other means</p> <p>“P” document published prior to the international filing date but later than the priority date claimed</p> <p>“T” later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>“X” document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p> <p>“Y” document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</p> <p>“&” document member of the same patent family</p>		
Date of the actual completion of the international search 21 August 2024 (21.08.2024)		Date of mailing of the international search report 04 September 2024 (04.09.2024)
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, VA 22313-1450 Facsimile No. 571-273-8300		Authorized officer MATOS TAINA Telephone No. 571-272-4300