US 20180317575A1

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2018/0317575 A1**

Nam (43) **Pub. Date: Nov. 8, 2018**

(54) **MULTIPURPOSE GARMENT AND METHOD OF MANUFACTURING THE SAME**

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(21) Appl. No.: **16/034,936**

(22) Filed: **Jul. 13, 2018**

Related U.S. Application Data

(63) Continuation-in-part of application No. 15/213,888, filed on Jul. 19, 2016.

Publication Classification

(51) **Int. Cl.**

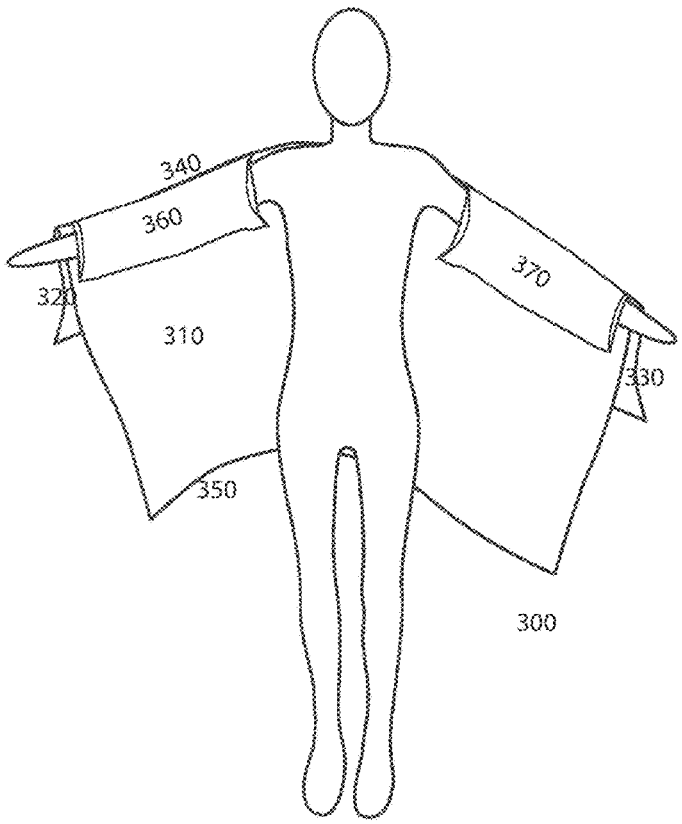
A41D 15/00	(2006.01)
D04B 15/36	(2006.01)
D04B 15/10	(2006.01)
D04B 7/34	(2006.01)
A41D 19/01	(2006.01)
A41D 27/08	(2006.01)
A41D 27/24	(2006.01)
A41D 3/08	(2006.01)
A41D 23/00	(2006.01)
A41D 27/10	(2006.01)
D04B 7/28	(2006.01)

(52) **U.S. Cl.**

CPC ***A41D 15/00*** (2013.01); ***D04B 15/36*** (2013.01); ***D04B 15/10*** (2013.01); ***D04B 7/34*** (2013.01); ***A41D 19/01*** (2013.01); ***A41D 27/08*** (2013.01); *D10B 2501/04* (2013.01); ***A41D 3/08*** (2013.01); ***A41D 23/00*** (2013.01); ***A41D 27/10*** (2013.01); ***D04B 7/28*** (2013.01); *A41D 2500/10* (2013.01); ***A41D 27/24*** (2013.01)

(57) **ABSTRACT**

A multipurpose garment manufactured by knitting a first section, the first section including a plurality of single courses; knitting a second section, the second section including a plurality of double courses; knitting a third section, the third section including a plurality of single courses; knitting a fourth section, the fourth section including a plurality of double courses; and knitting a fifth section, the fifth section including a plurality of single courses, wherein transitions between the first section and the second section, the second section and the third section, the third section and the fourth section, and the fourth section and the fifth section are seamless. The multipurpose garment includes sleeve portions being seamlessly knitted to a body portion due to transition stitches connecting the body portion and the sleeve portions.



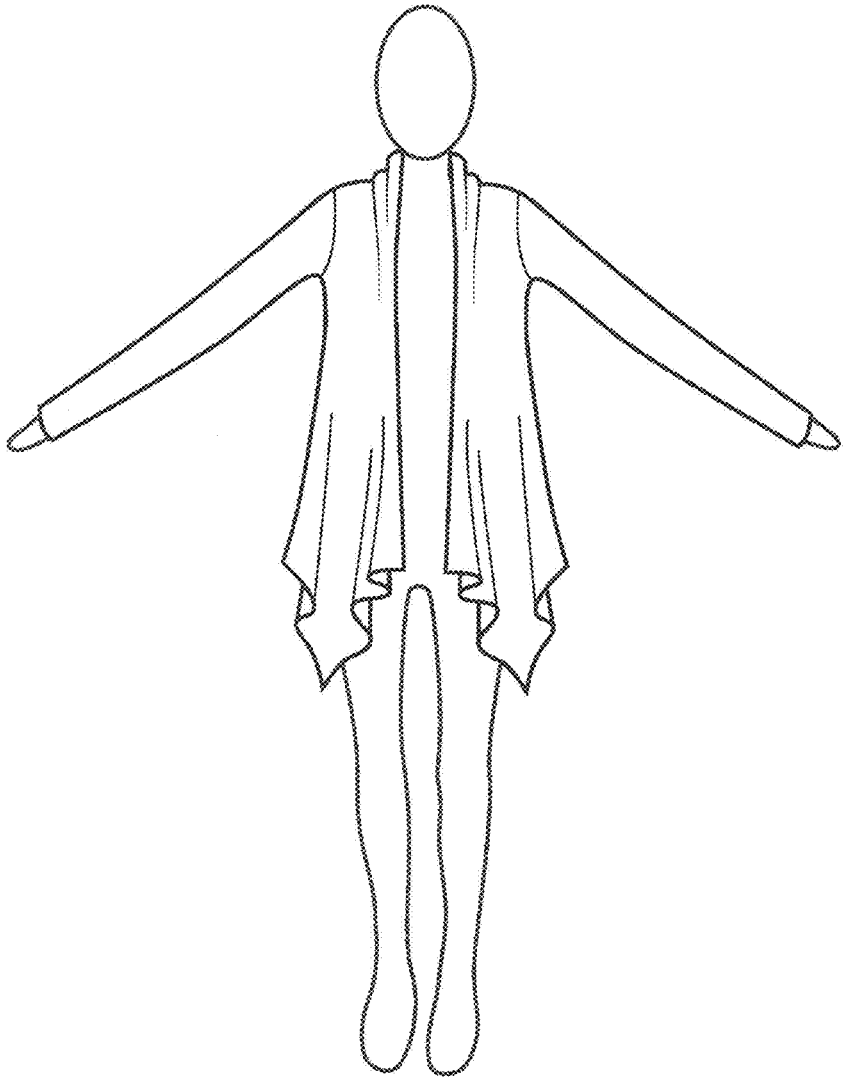


FIG. 1

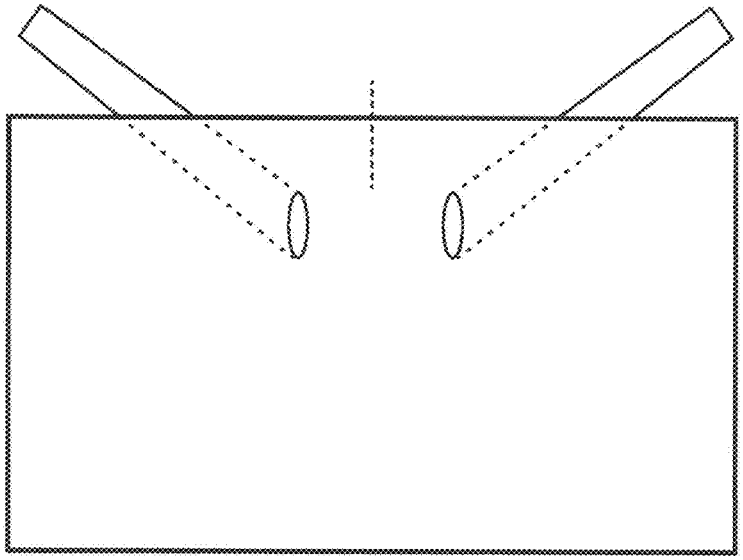


FIG. 2

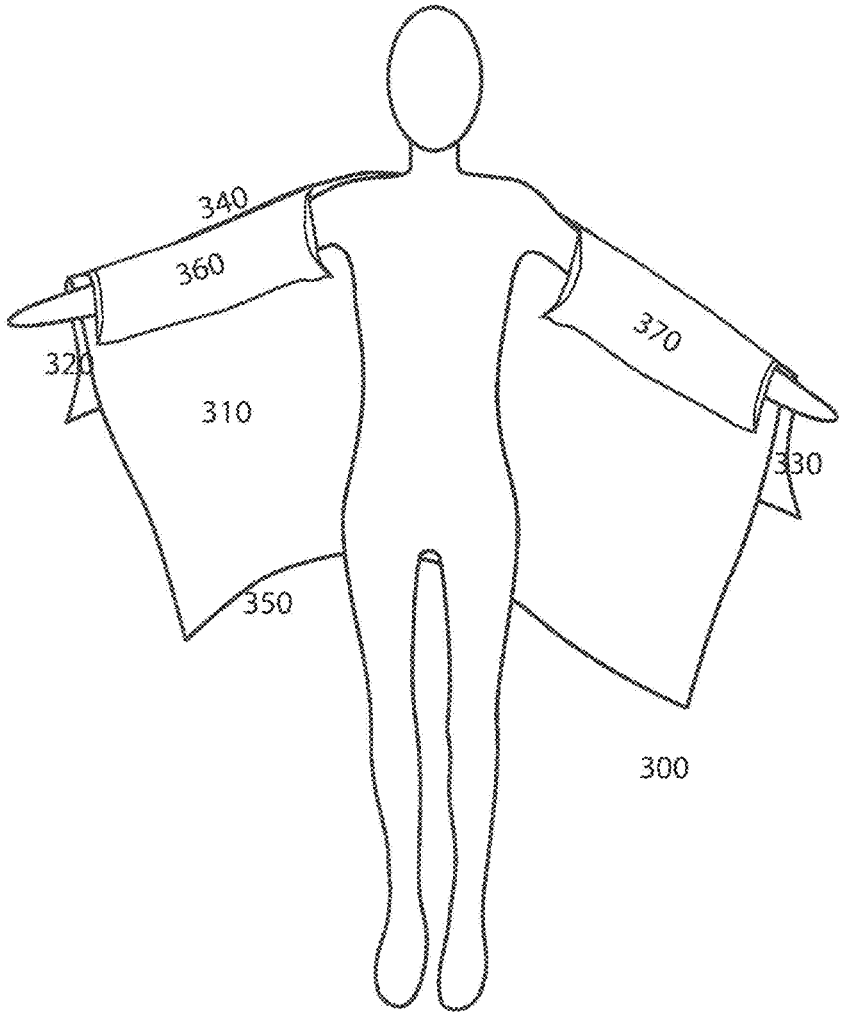


FIG. 3

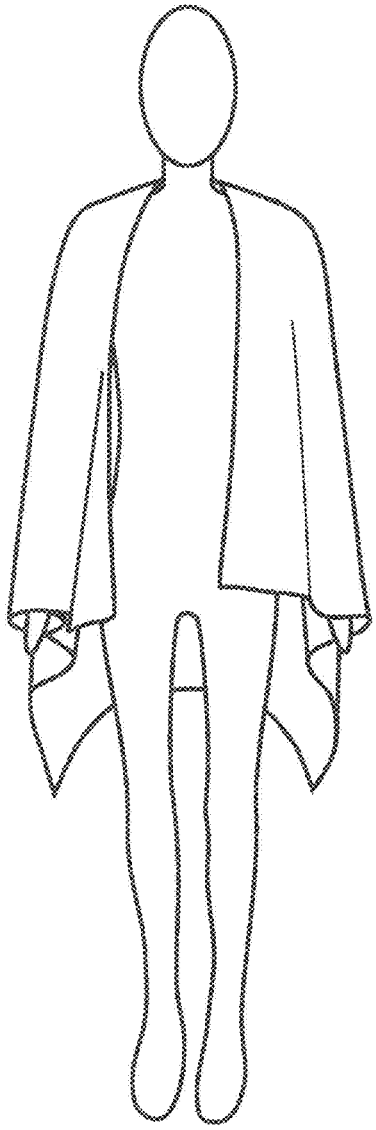


FIG. 4

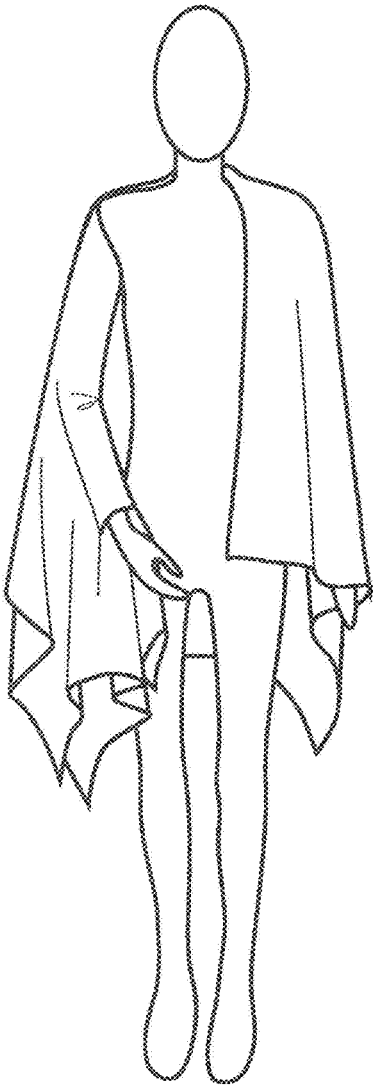


FIG. 5

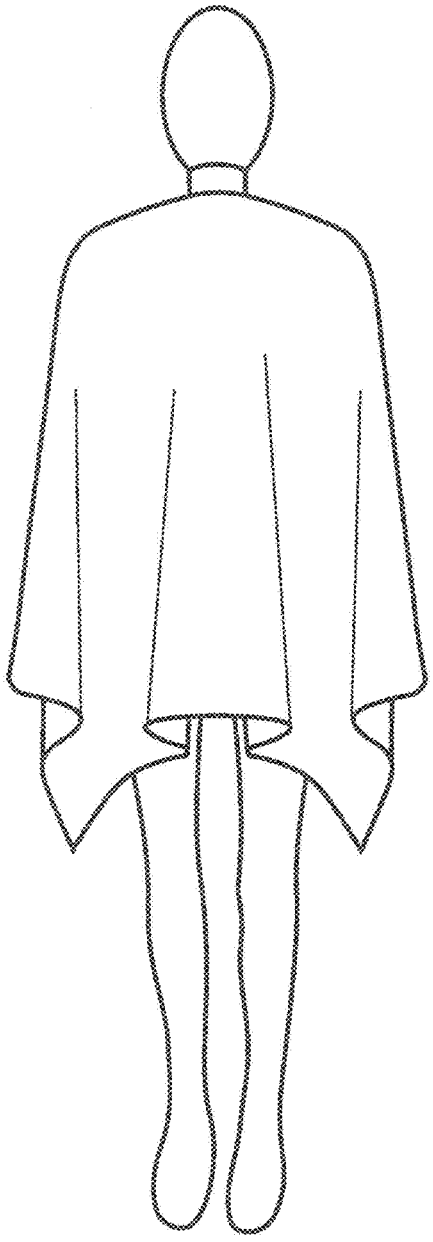


FIG. 6

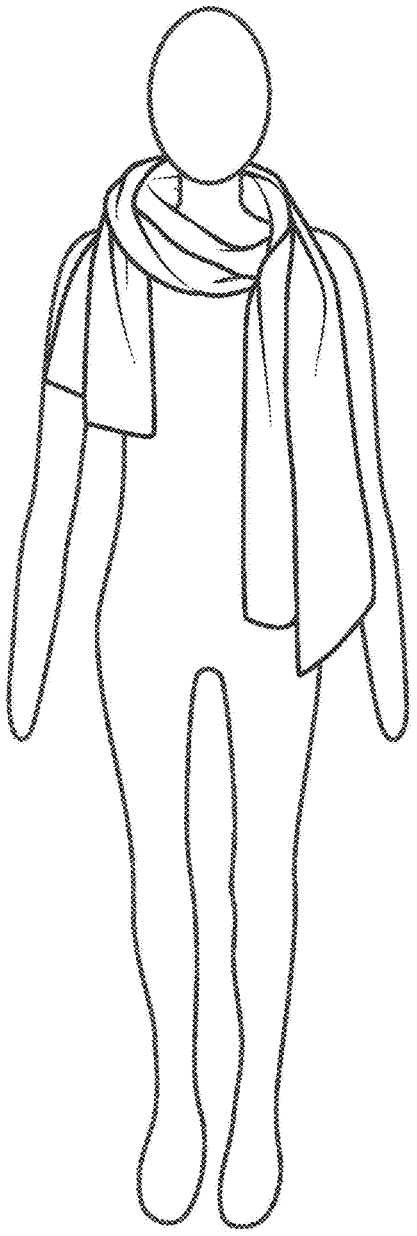


FIG. 7

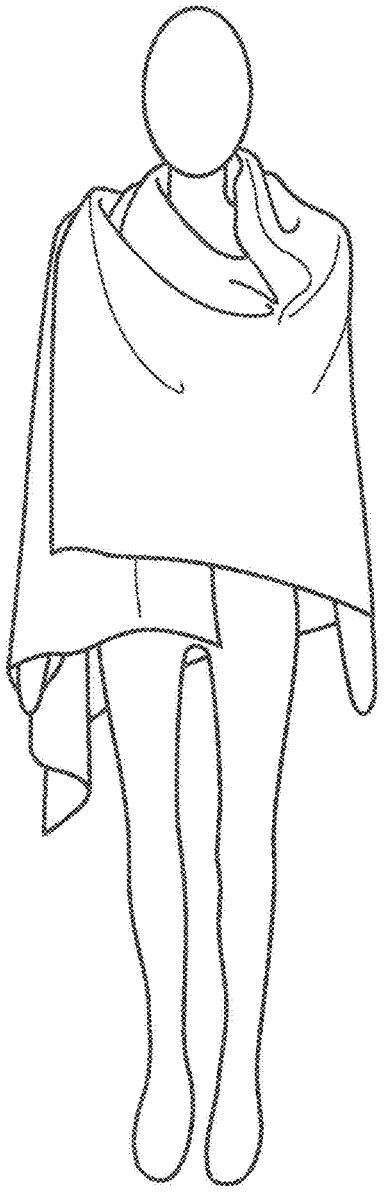


FIG. 8

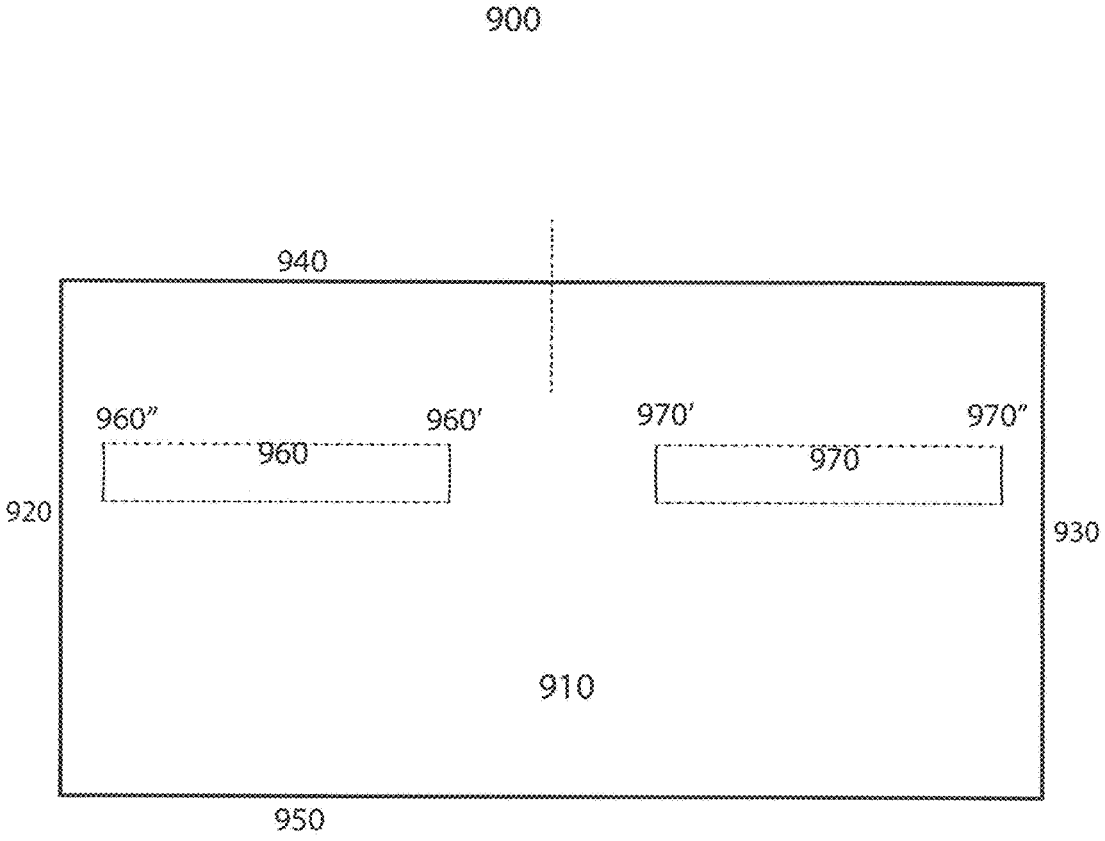


FIG. 9

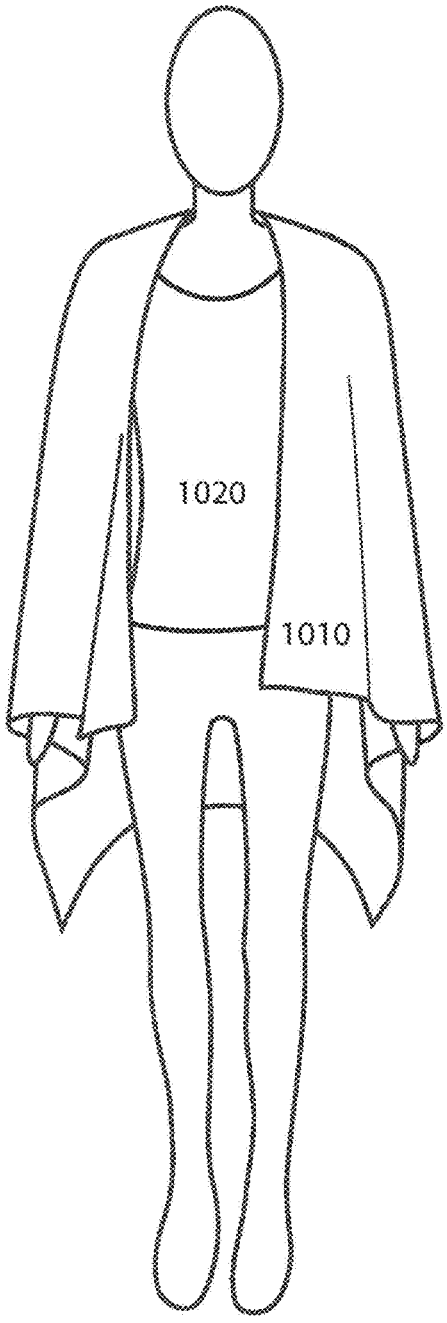


FIG. 10

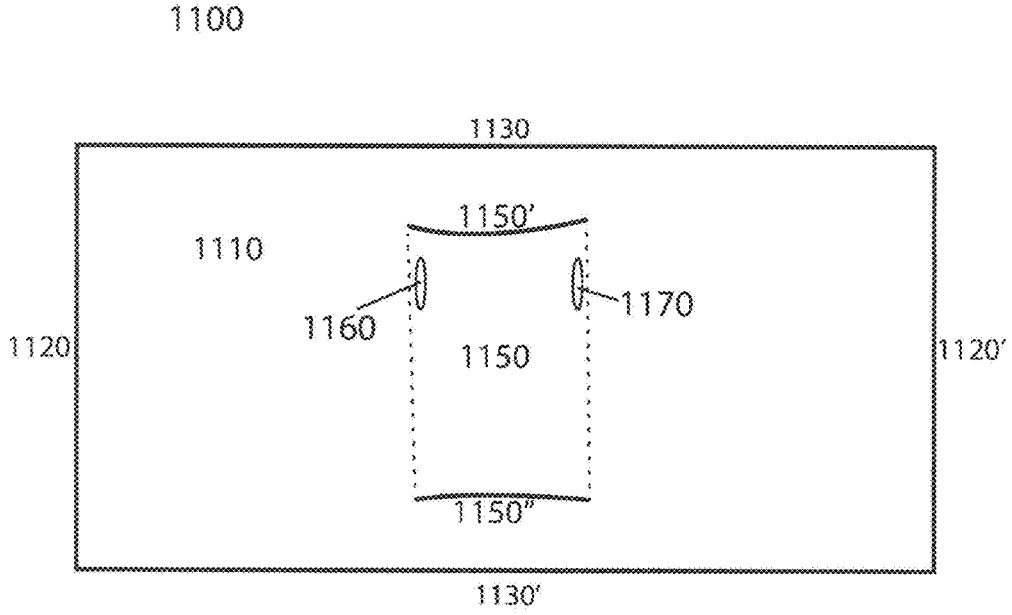


FIG. 11

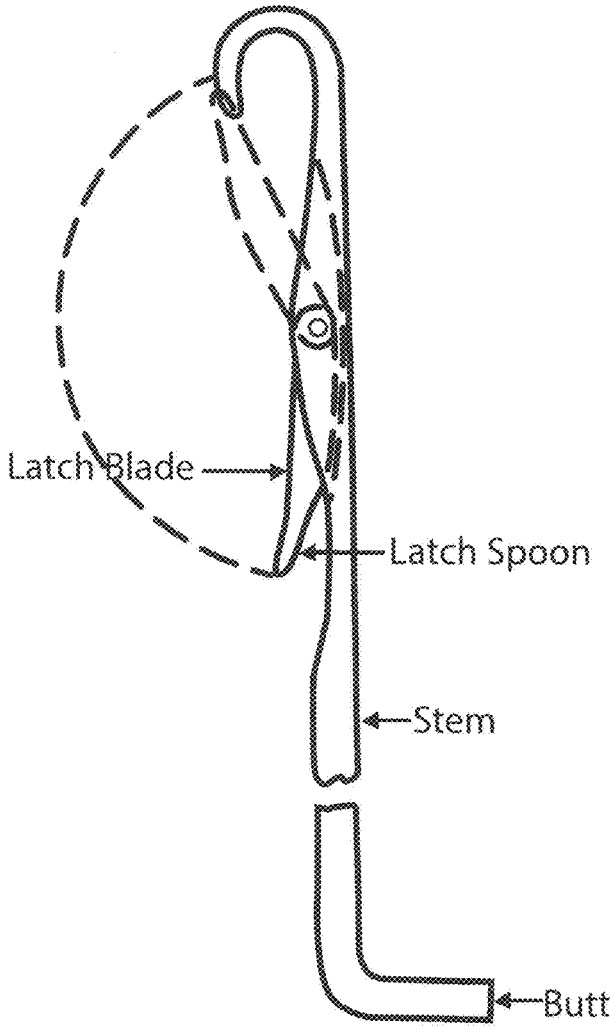


FIG. 12

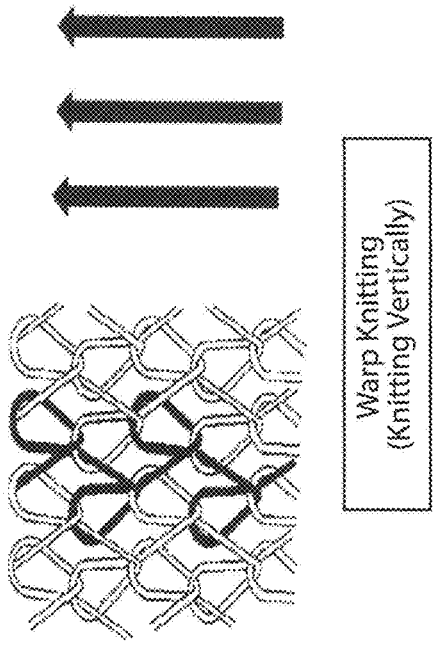


FIG. 13b

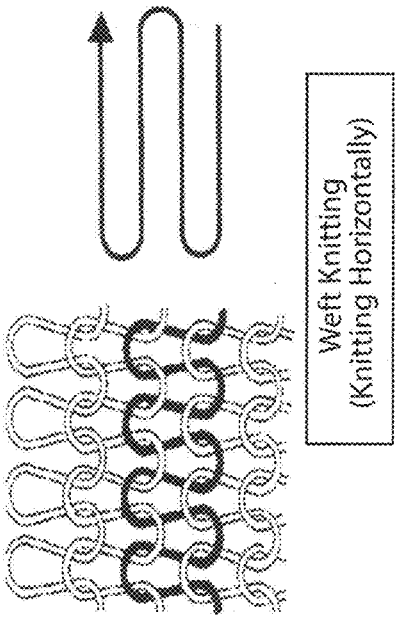


FIG. 13a

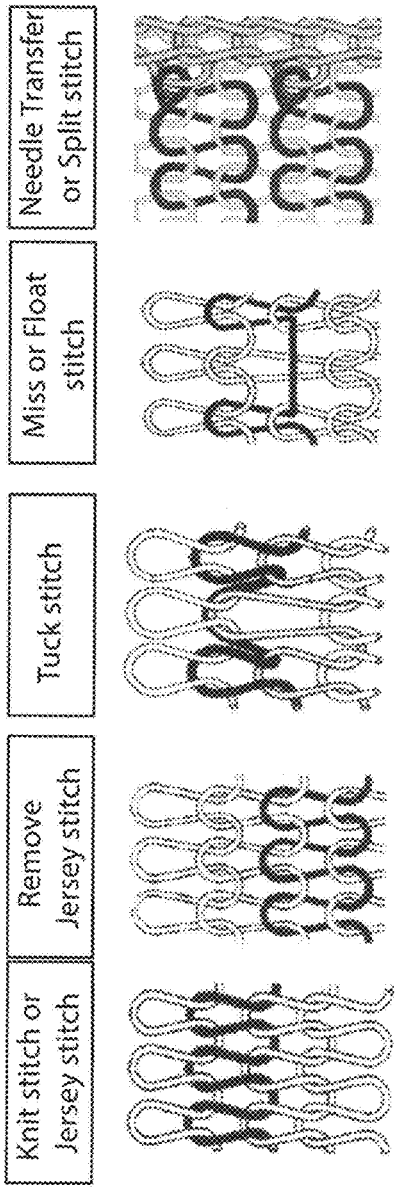

Basic stitch types in Knitting
Knit stitch or Jersey stitch
Remove Jersey stitch
Tuck stitch
Miss or Float stitch
Needle Transfer or Split stitch

FIG. 14

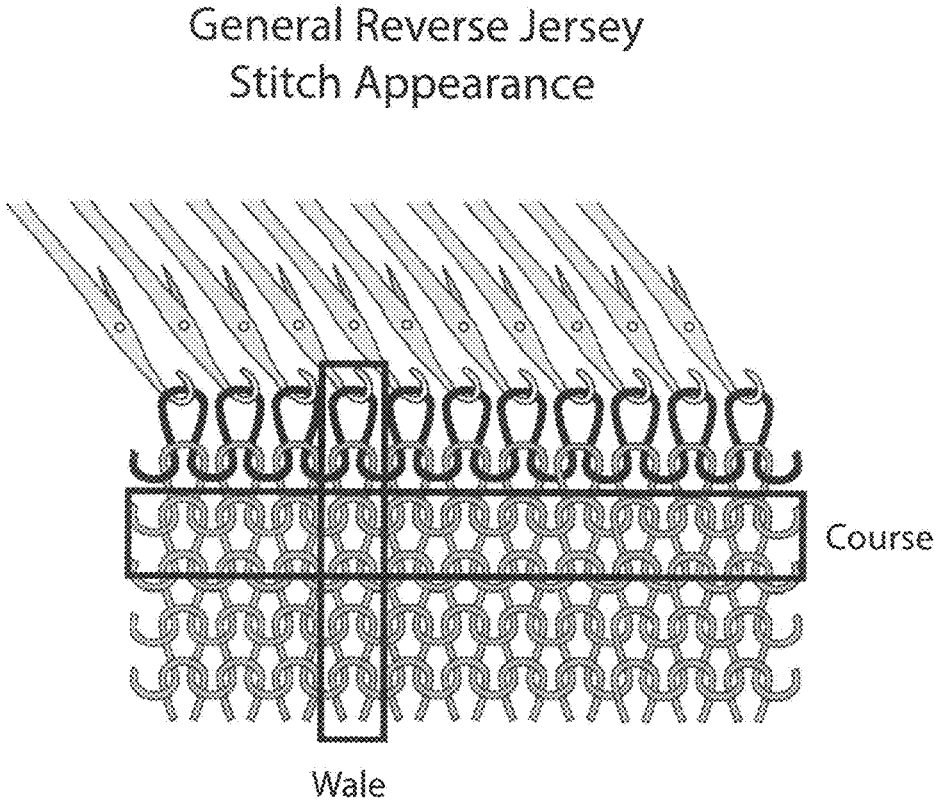


FIG. 15

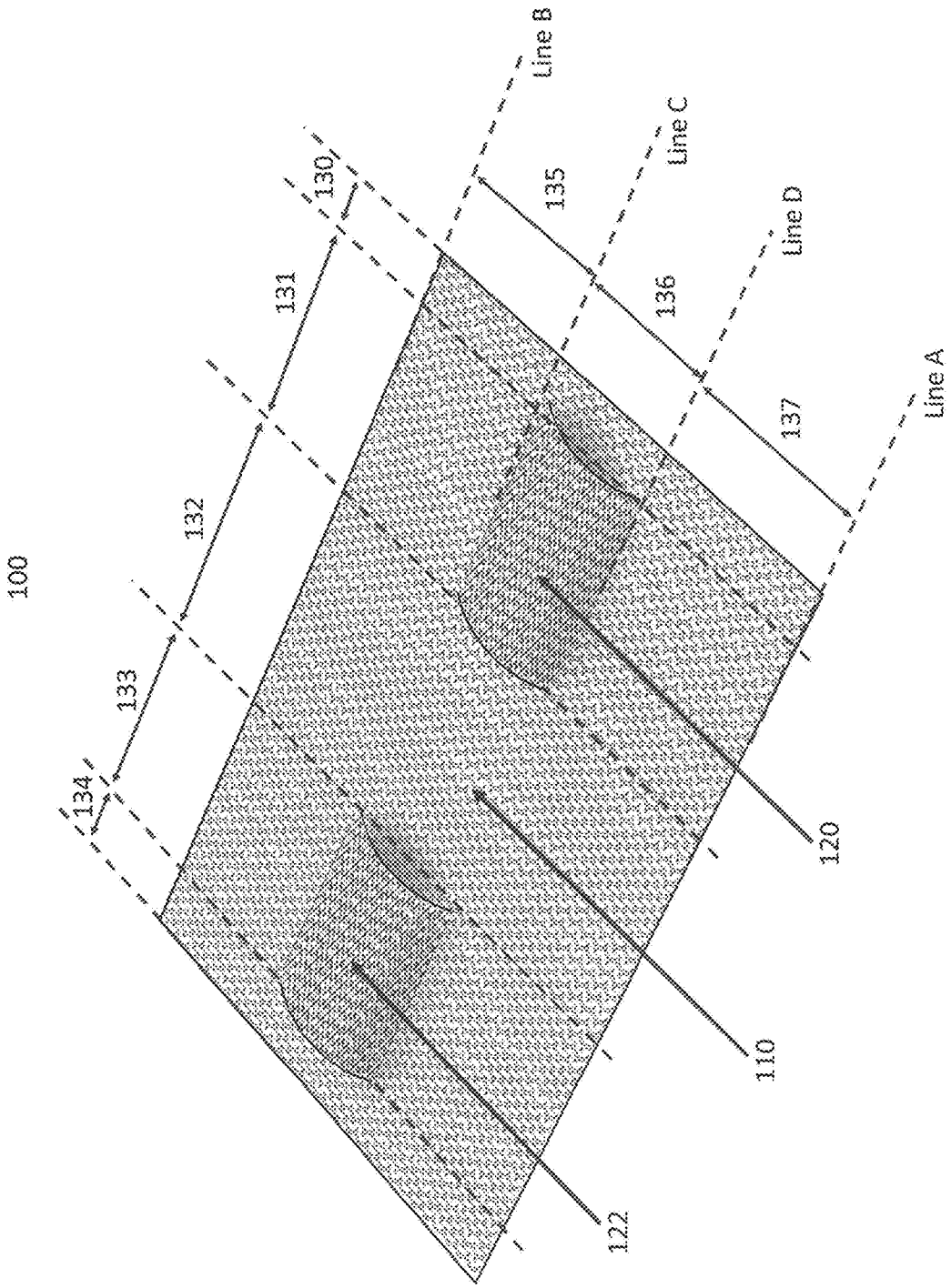

100
Line A
Line B
Line C
Line D
130
131
132
133
134
135
136
137
110
120
122

Fig. 16a

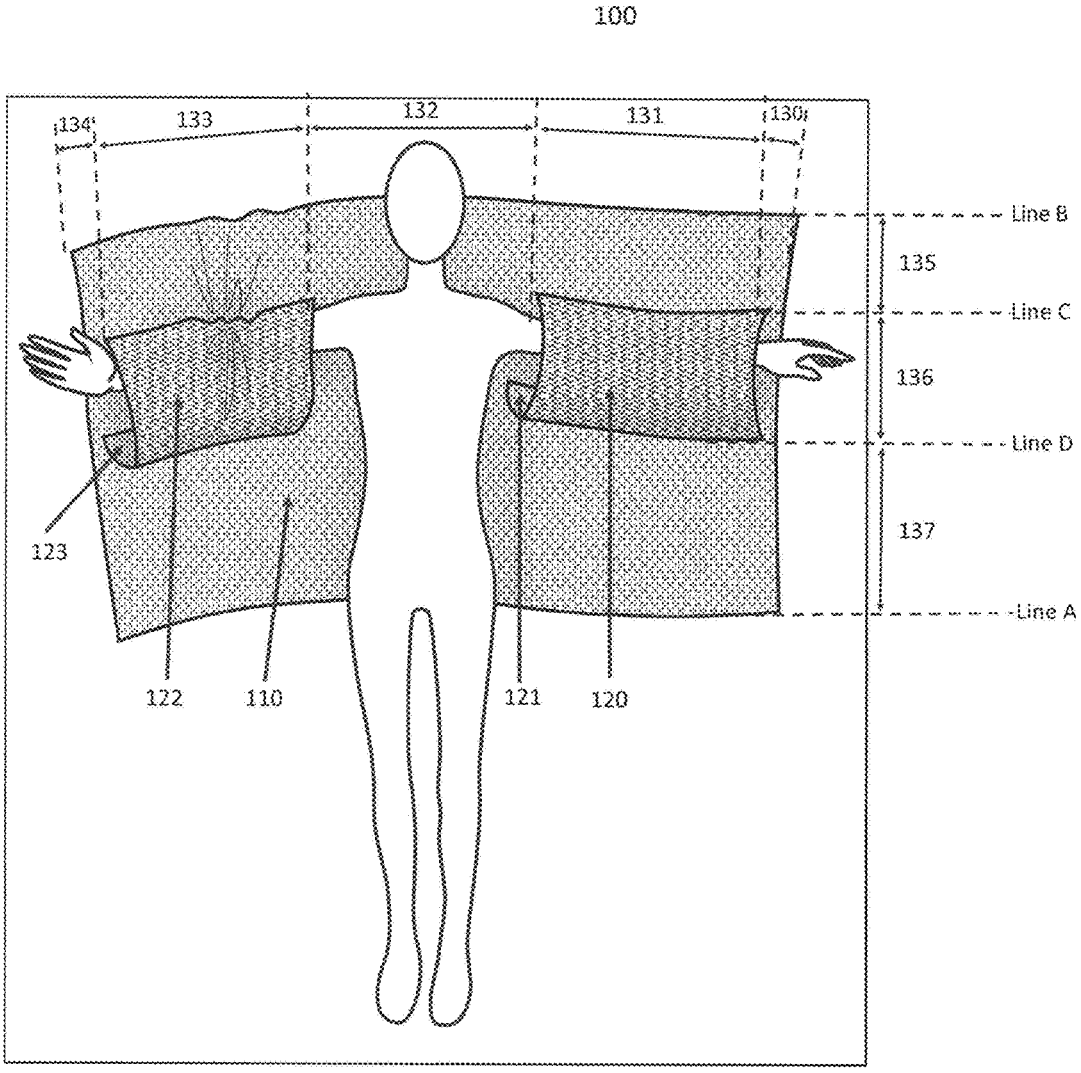

100
134
133
132
131
130
Line B
135
Line C
136
Line D
137
Line A
123
122
110
121
120

Fig. 16b

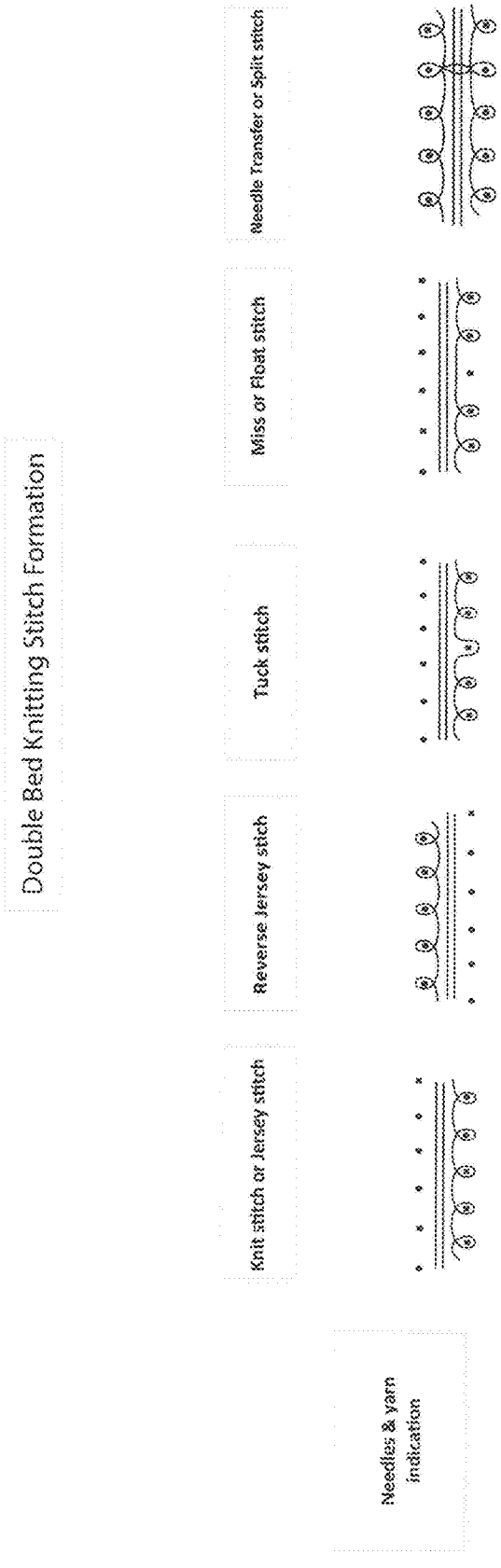

Double Bed Knitting Stitch Formation
Needles & yarn indication
Knit stitch or Jersey stitch
Reverse Jersey stitch
Tuck stitch
Miss or Float stitch
Needle Transfer or Split stitch

Fig. 17

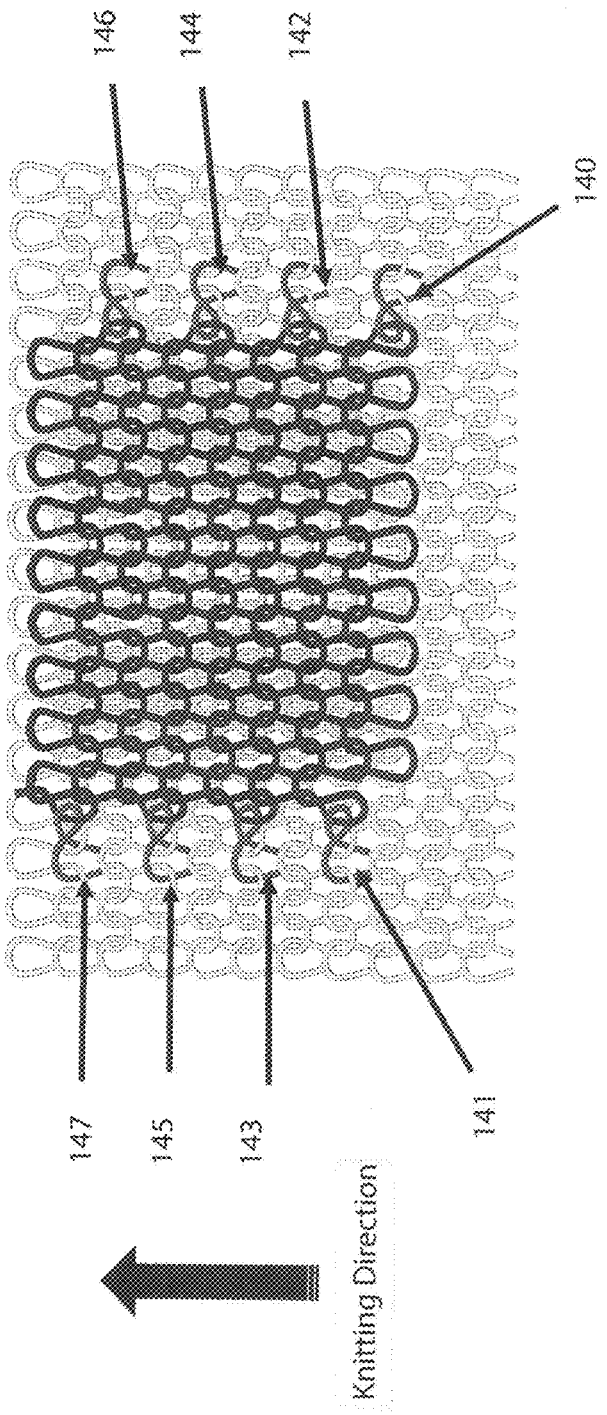


Fig. 18a

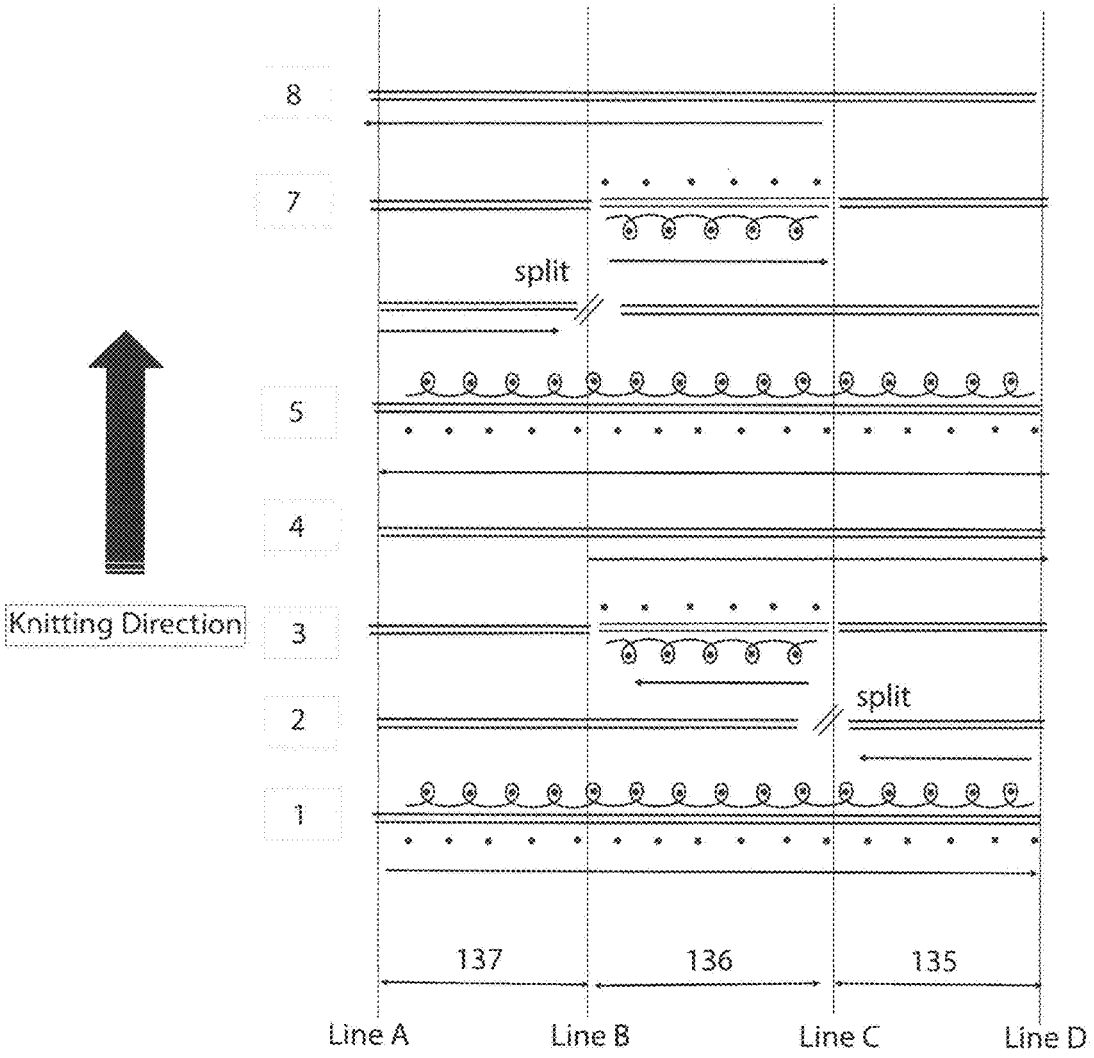

8
7
split
5
4
3
2
split
1
Knitting Direction
137
136
135
Line A
Line B
Line C
Line D

Fig. 18b

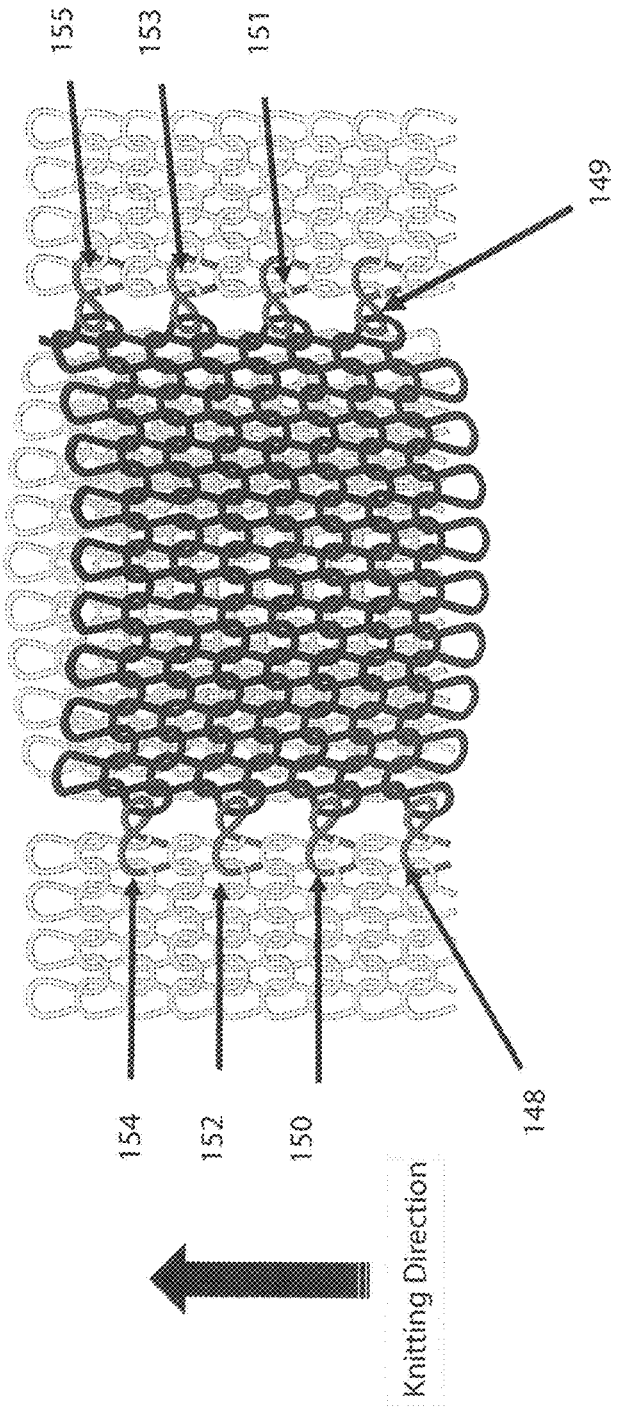


Fig. 18c

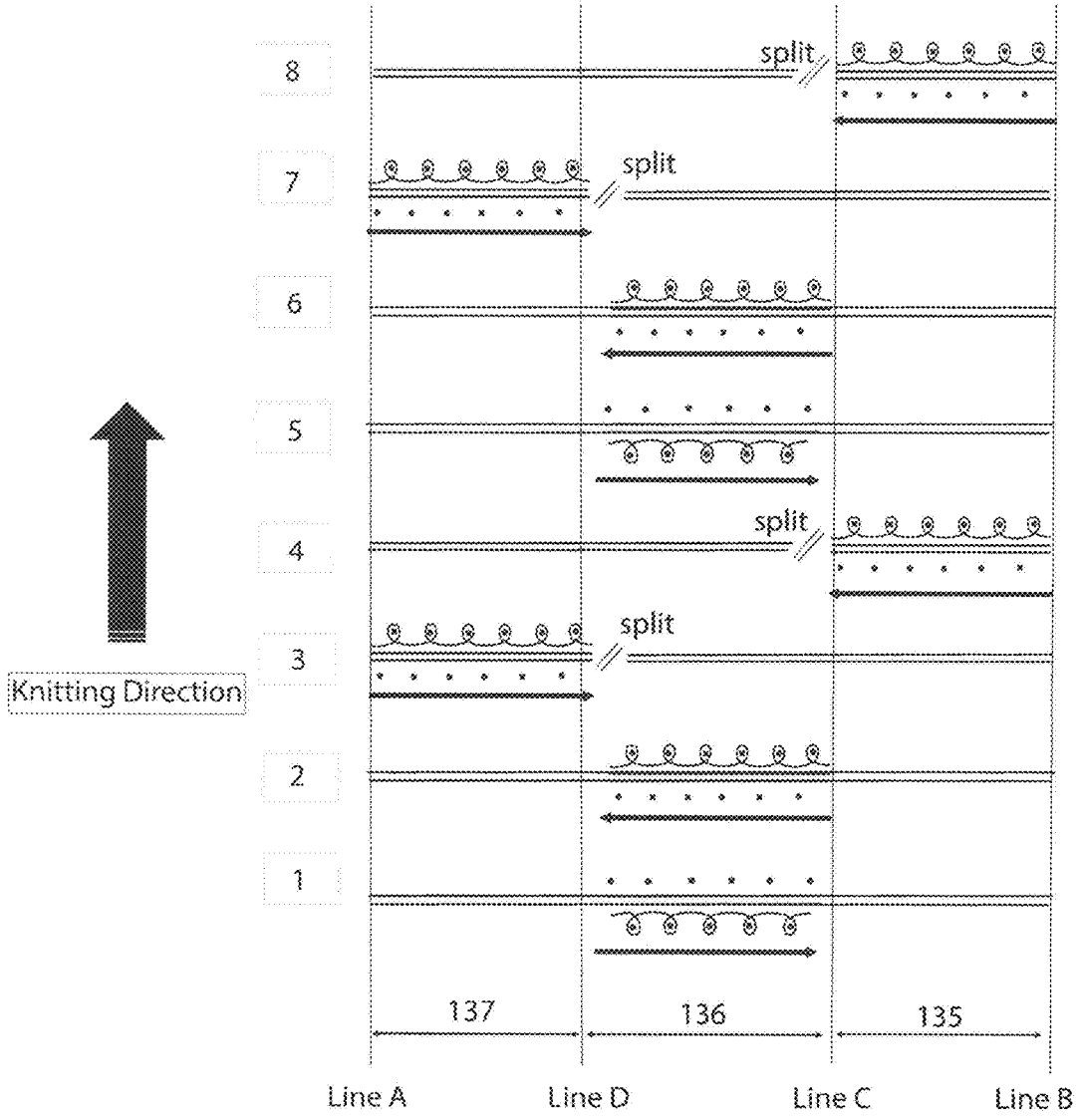

8
7
6
5
4
3
2
1
split
split
split
split
Knitting Direction
137
136
135
Line A
Line D
Line C
Line B

Fig. 18d

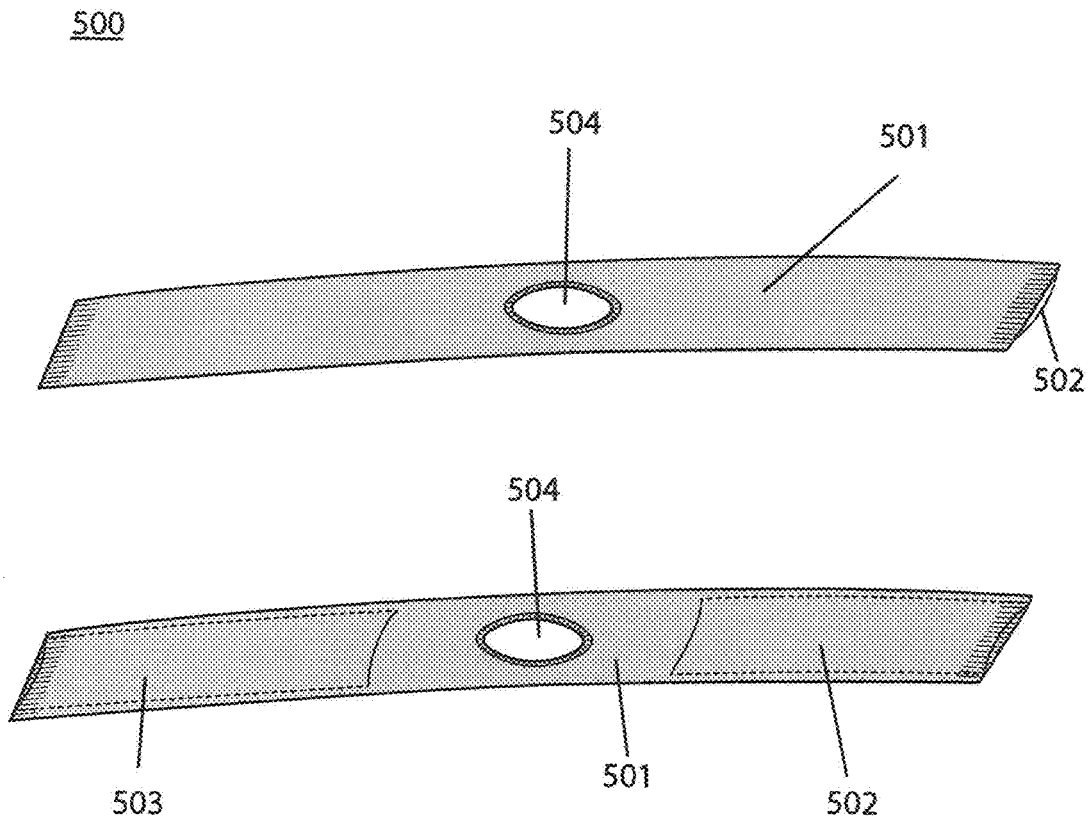


FIG. 19

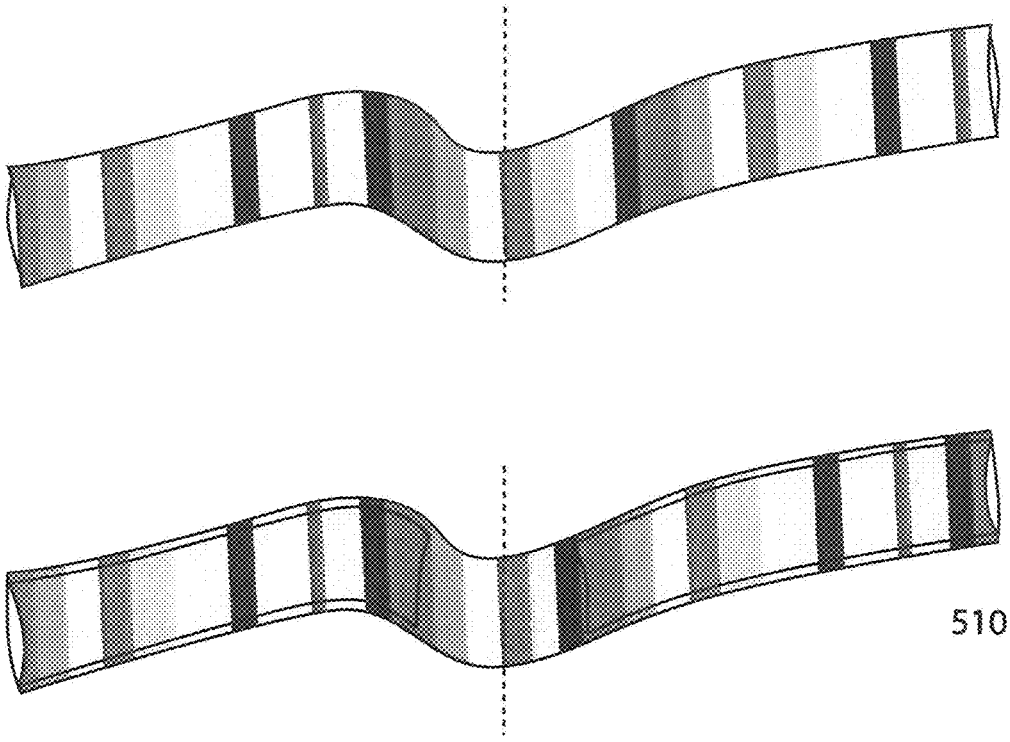


FIG. 20

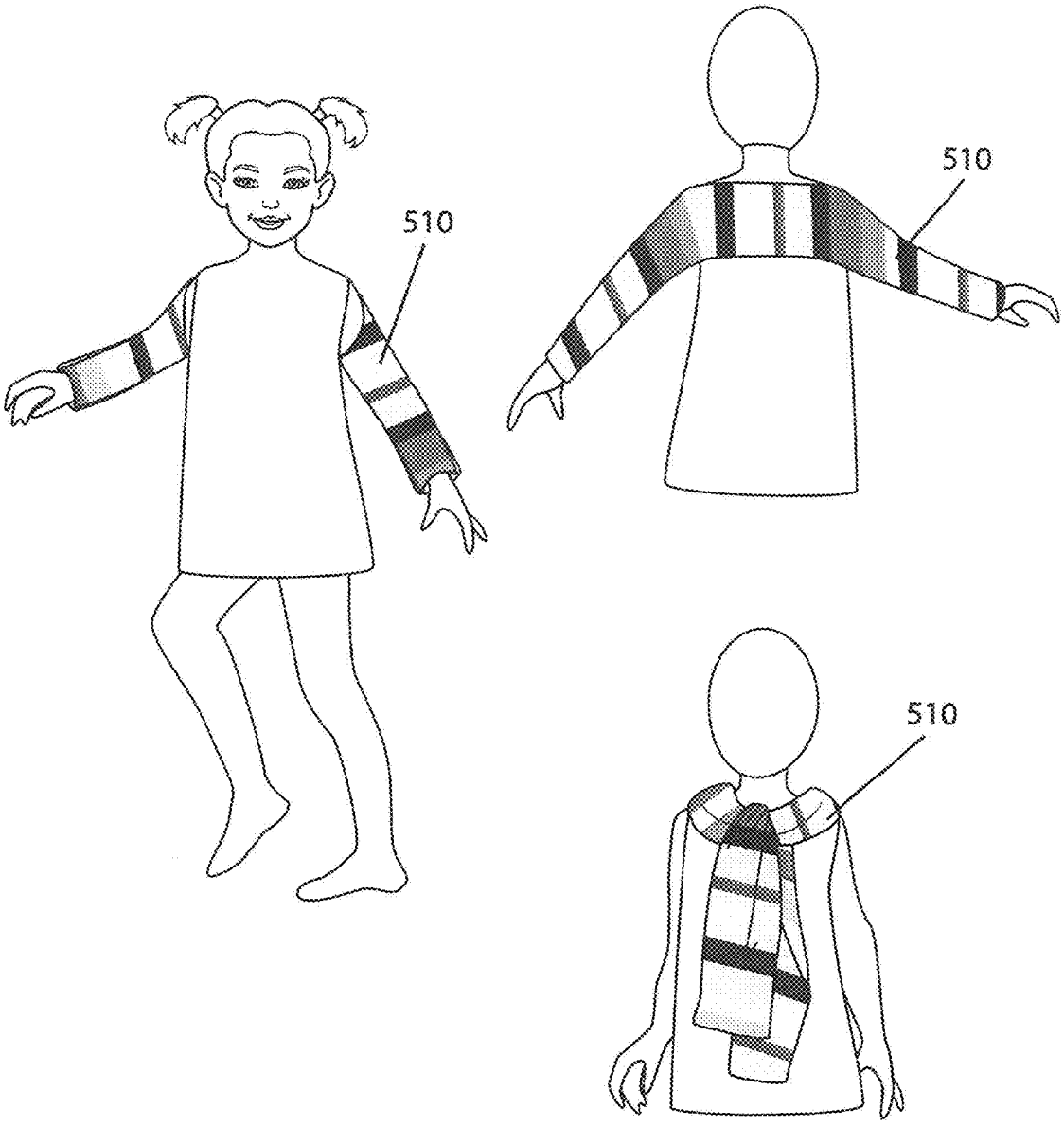


FIG. 21

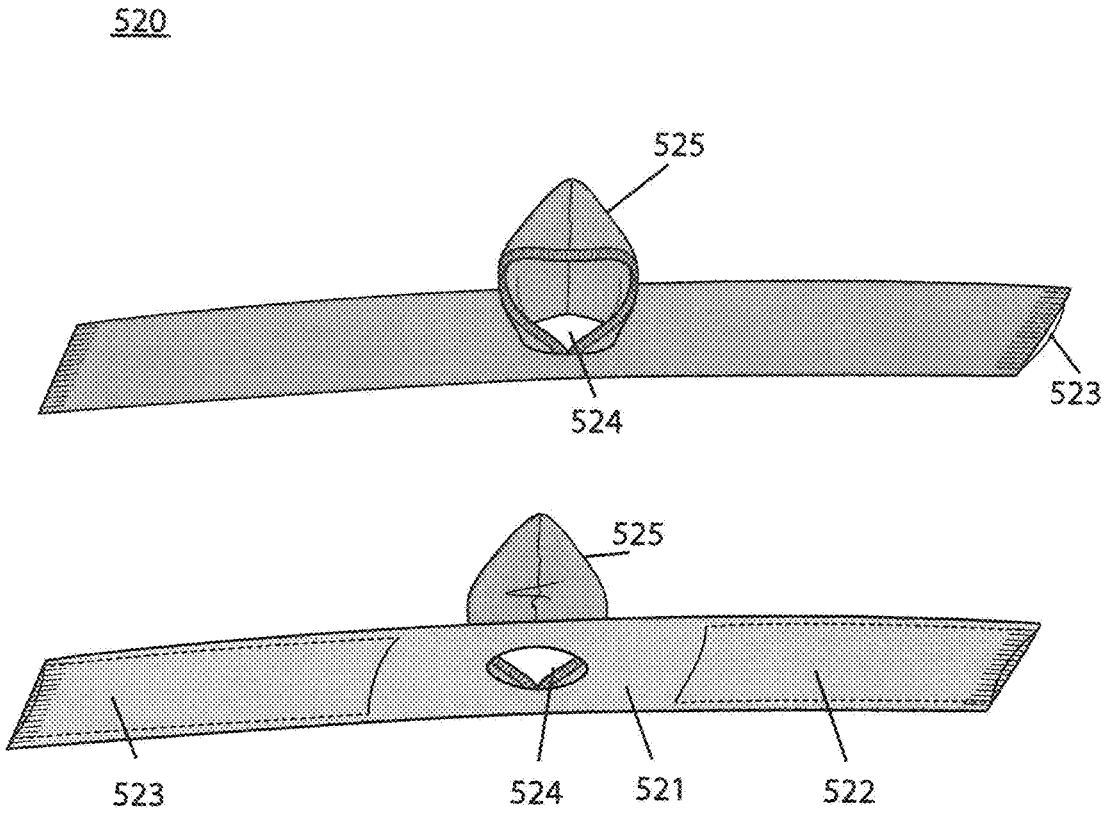


FIG. 22

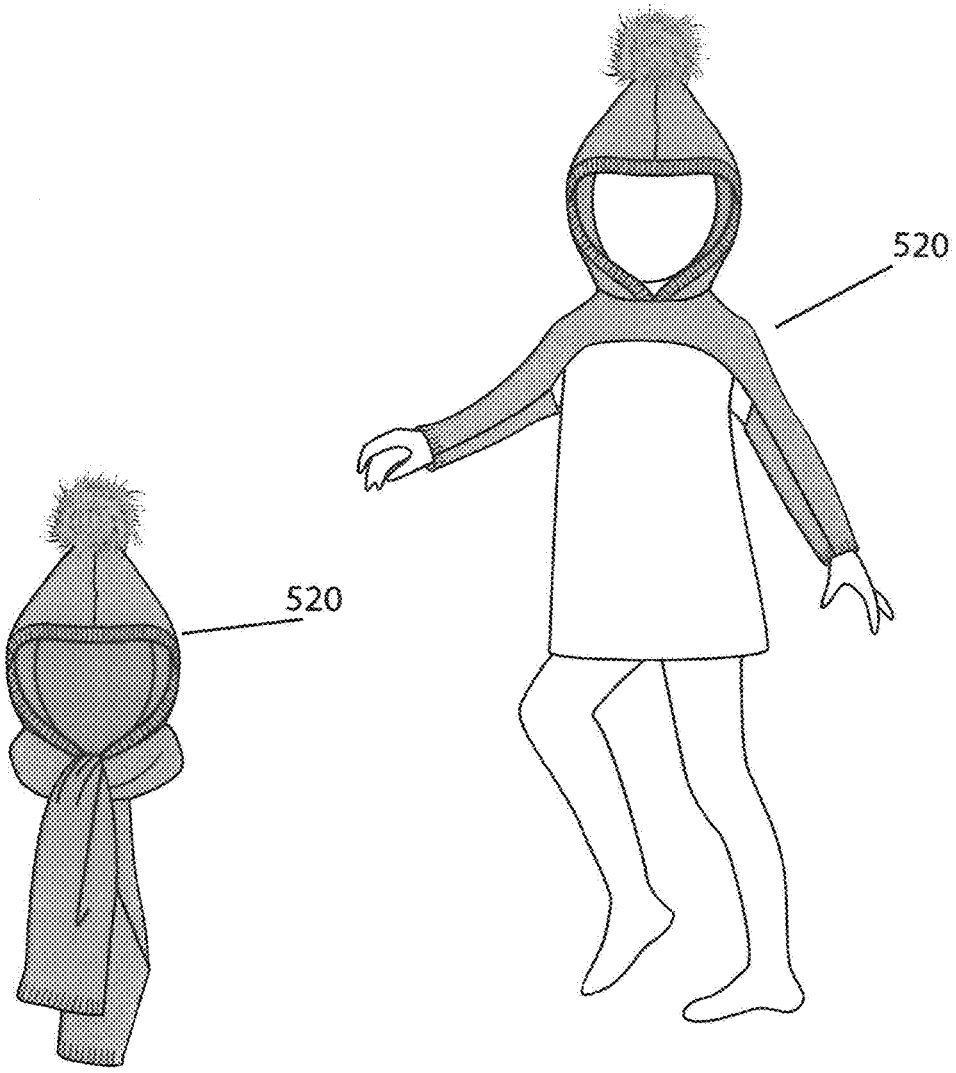


FIG. 23

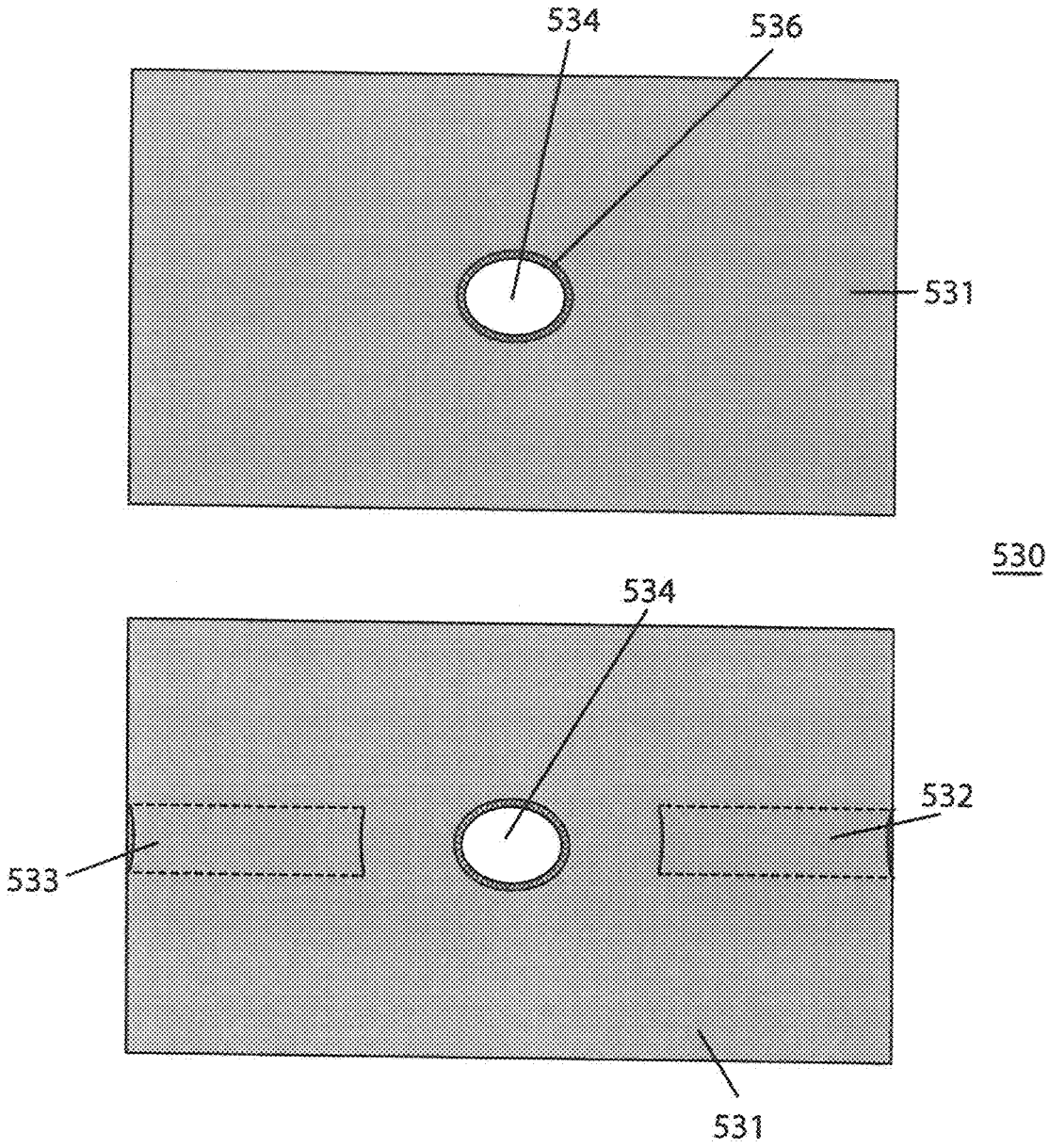


FIG. 24

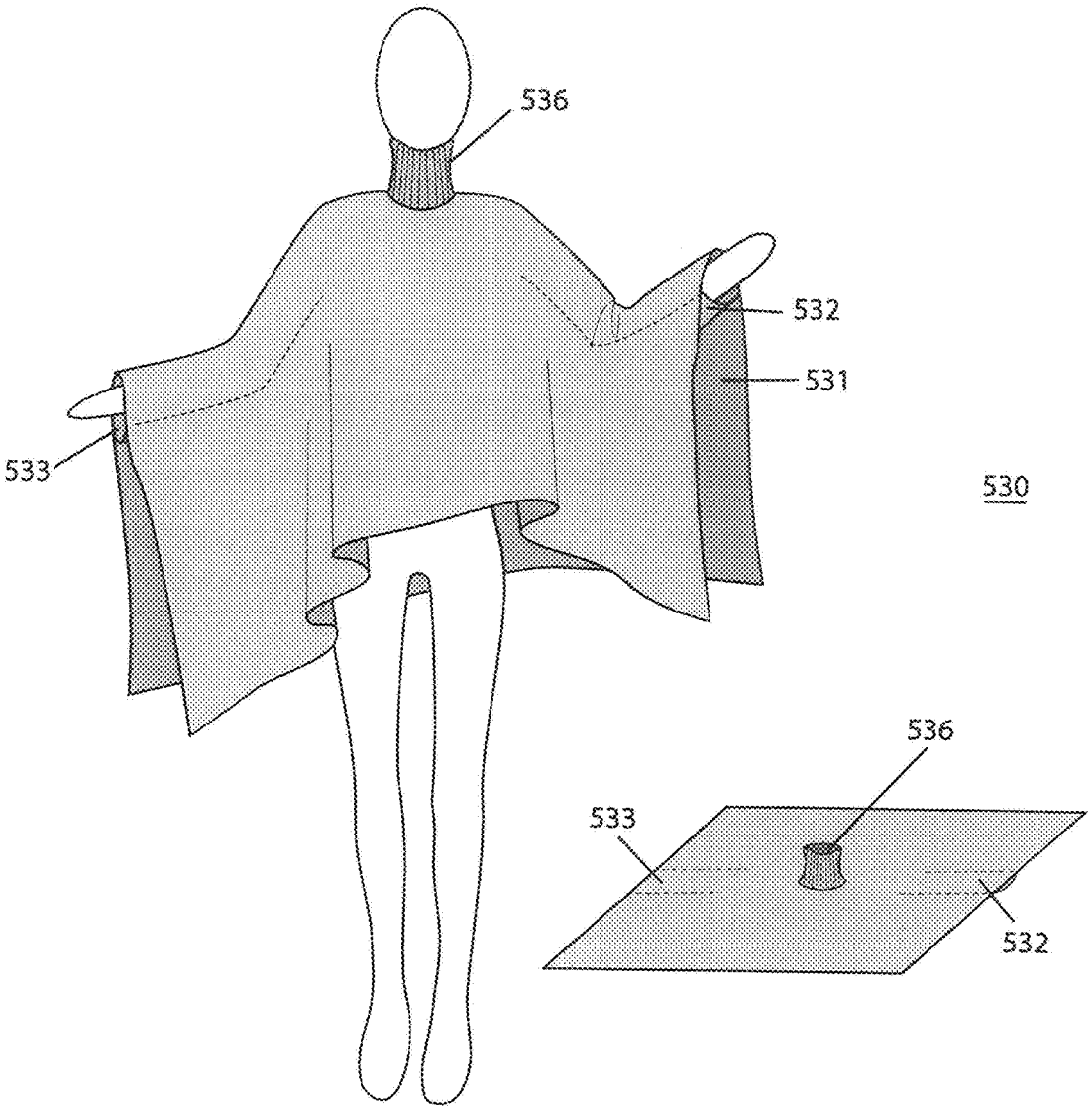


FIG. 25

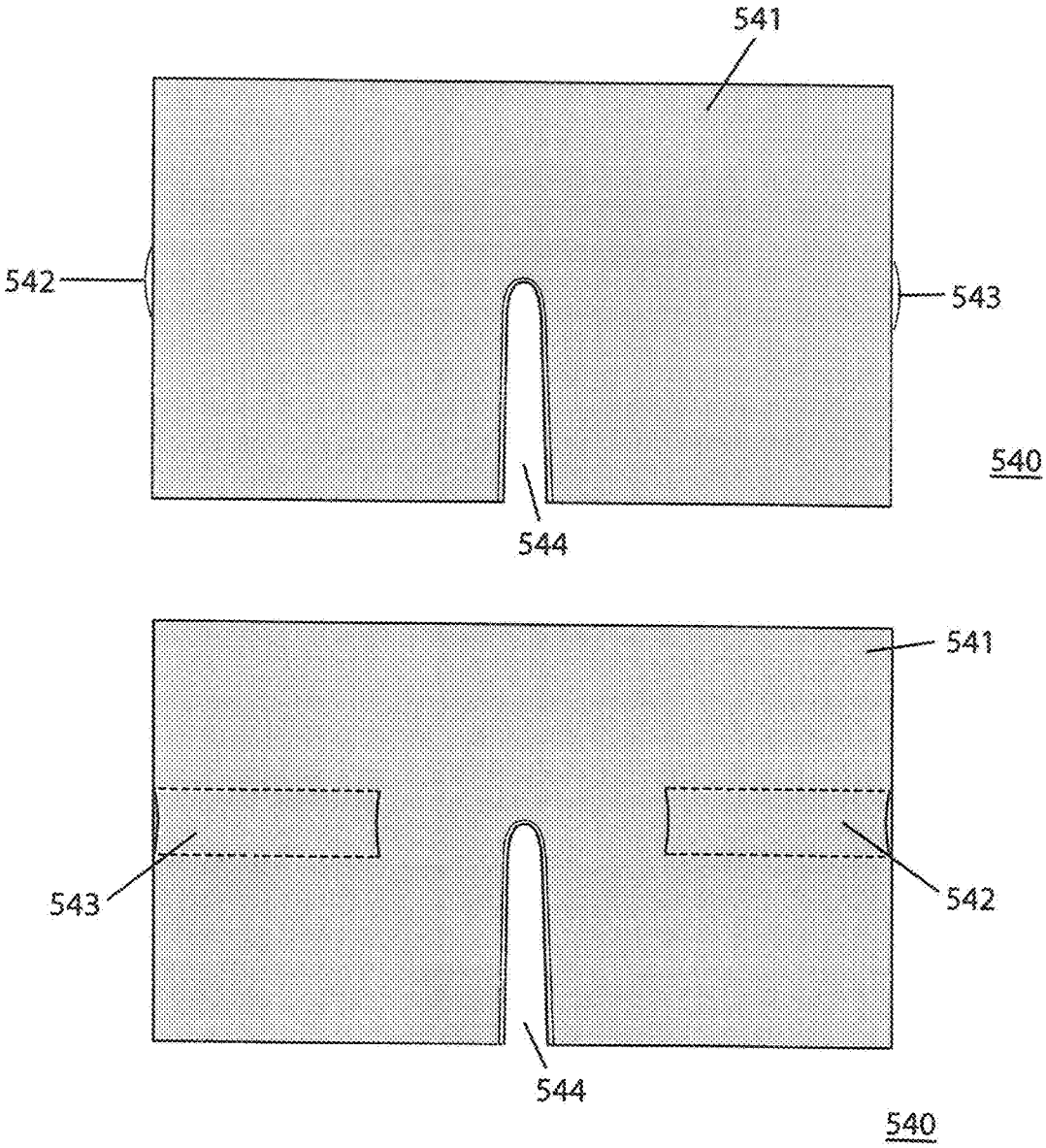


FIG. 26

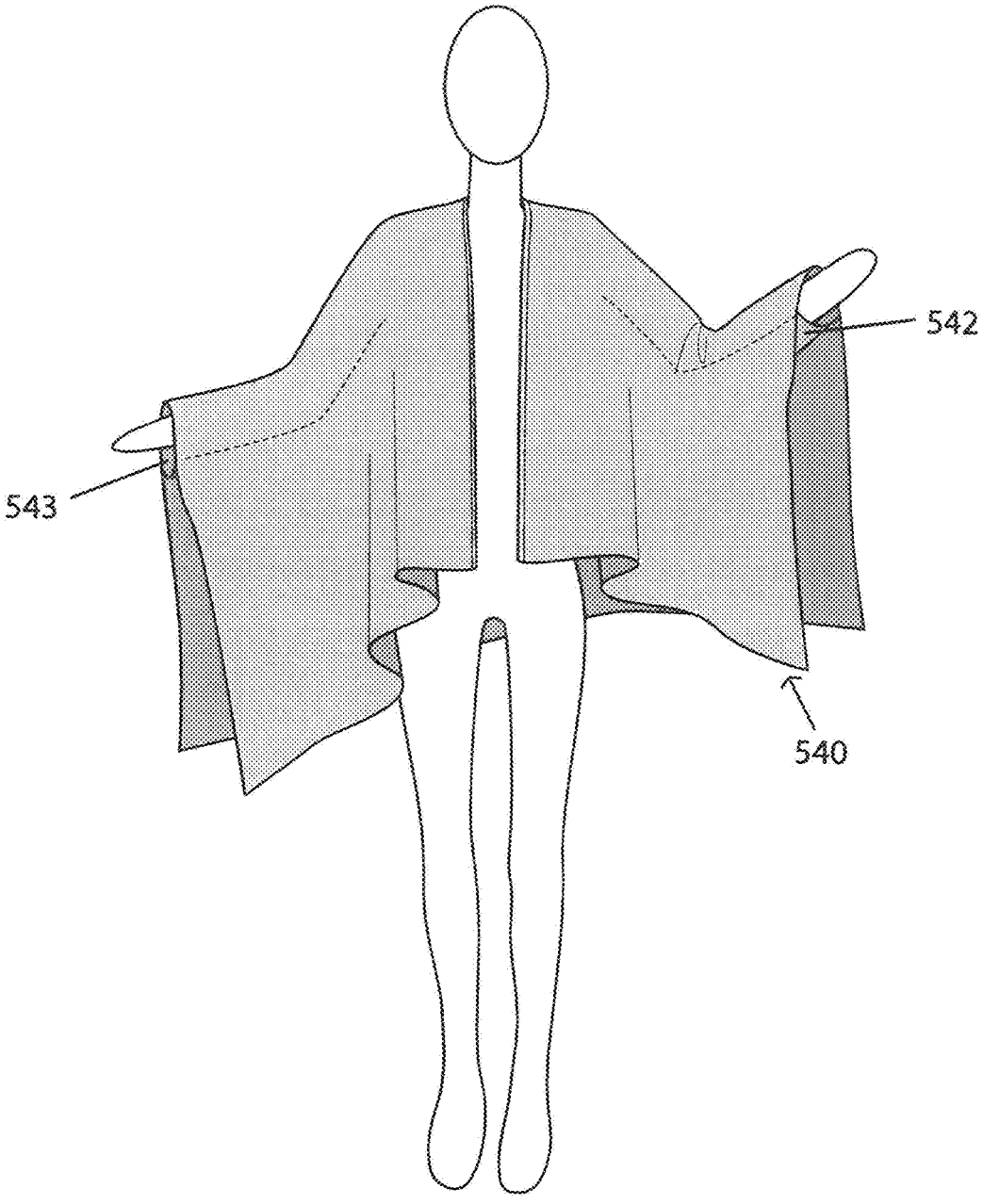


FIG. 27

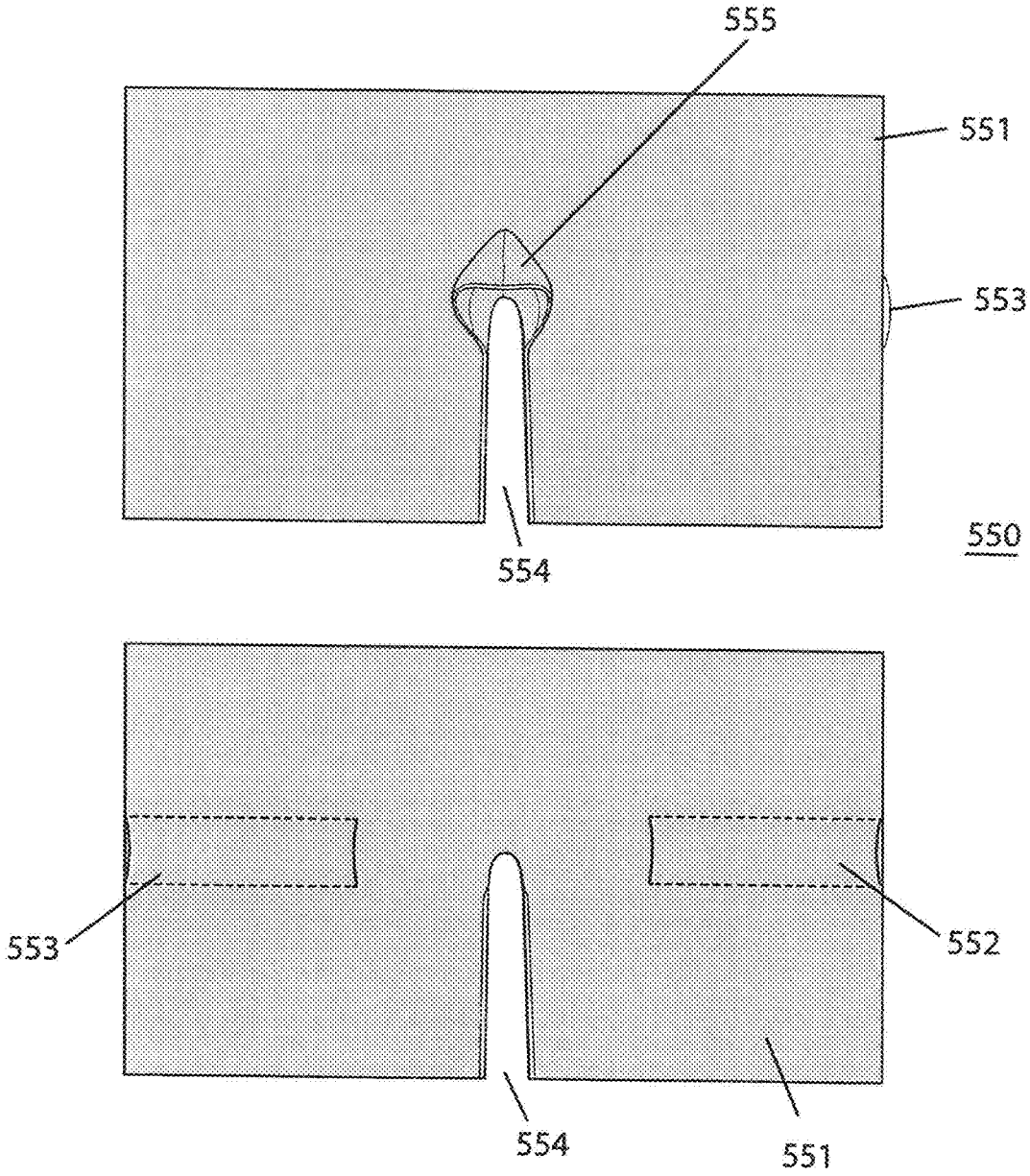


FIG. 28

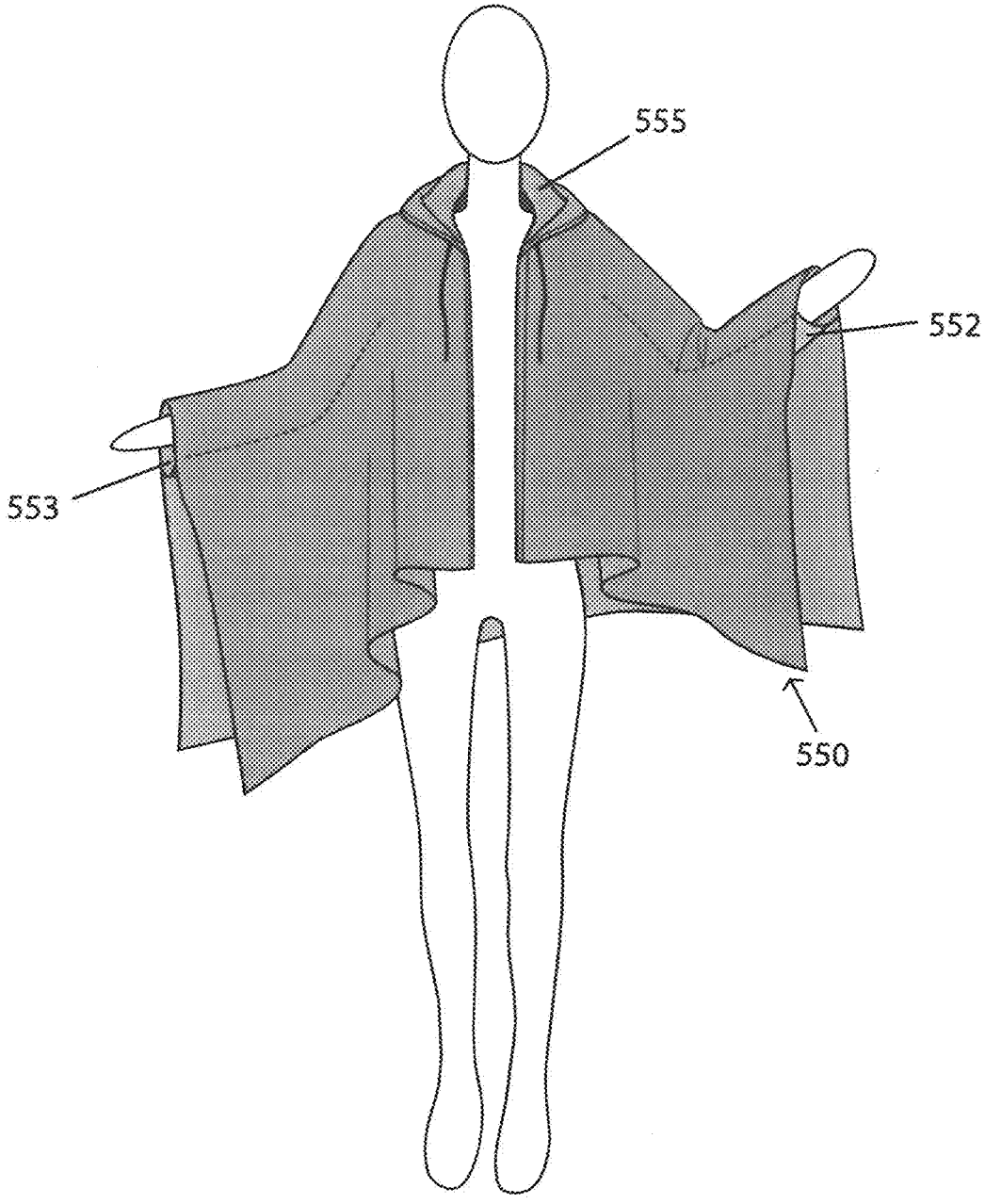


FIG. 29

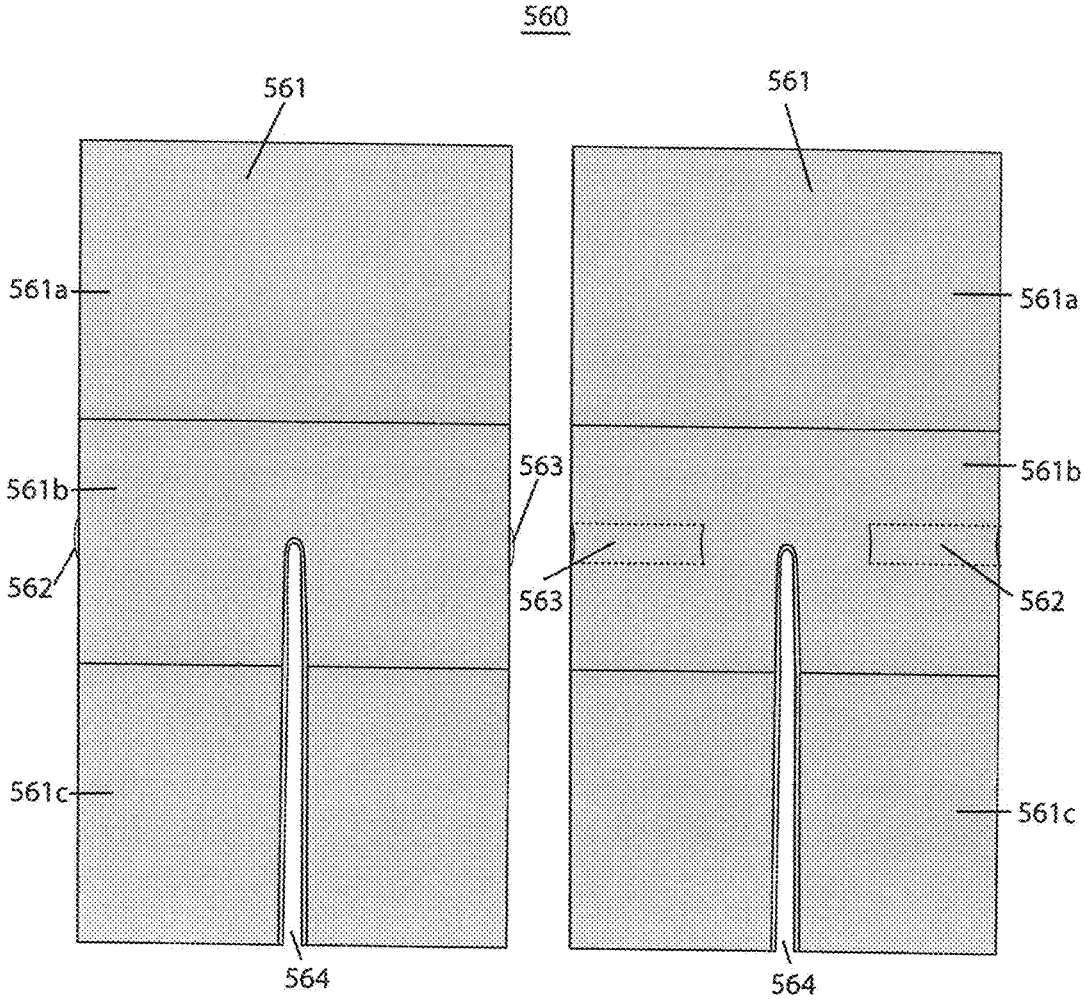

560
561
561
561a
561a
561b
561b
563
562
563
562
561c
561c
564
564

FIG. 30

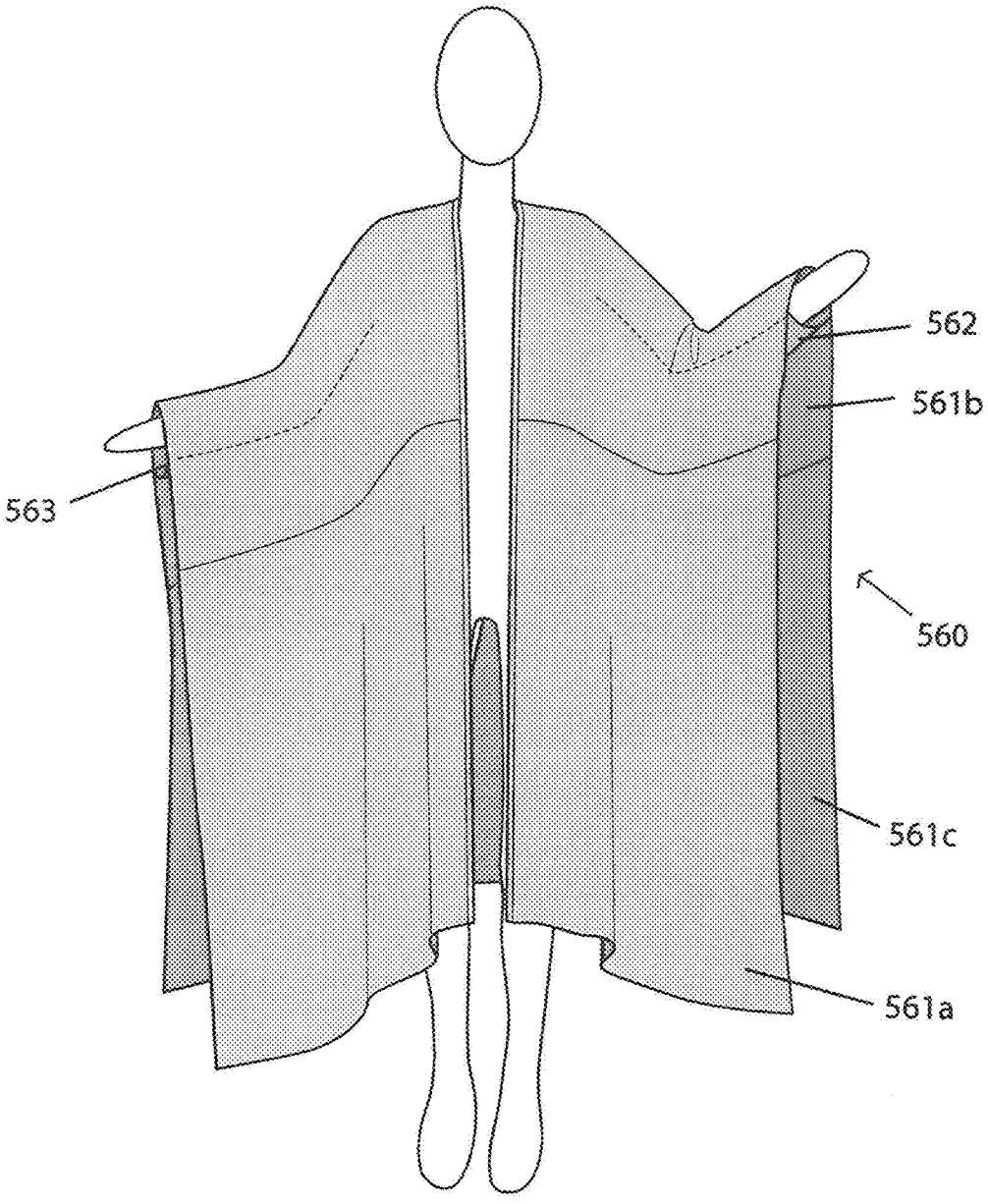


FIG. 31

MULTIPURPOSE GARMENT AND METHOD OF MANUFACTURING THE SAME

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application is a continuation-in-part of co-pending U.S. patent application Ser. No. 15/213,888, filed Jul. 19, 2016, now pending, which is incorporated here by reference in its entirety to provide continuity of disclosure.

BACKGROUND

[0002] Shawls are often worn to keep the wearer warm, impart a feeling of comfort and coziness, and even to impart a sense of style. A traditional shawl may range from a simple decorative rectangular segment of knit or woven fabric to more elaborate knit patterns that offer greater warmth. Where some shawls may simply be a utilitarian garment made from cotton, wool, acrylic or the like, for use in, e.g., a healthcare facility, others may be super-luxury.

[0003] Whatever the style, the shawl is typically wrapped around the shoulders of the wearer and allowed to drape, with the wearer relying on the dual forces of gravity and friction to keep the garment in position.

[0004] These traditional shawls have significant drawbacks. Because the garment is held in place only by gravity and friction, it is susceptible to slipping out of position or off the wearer entirely. A wearer that is in motion or otherwise active may need to hold the garment in place with one hand, reducing the wearer's ability to engage in other activity while wearing the garment. Similarly, since the shawl typically drapes, the front hangs open. In order to take advantage of the garment's heat-retention properties, the wearer must manually hold the garment closed around the front. The wearer may wish to keep the shawl closed for stylistic reasons as well, which would likewise immobilize one hand. Because of its amorphous shape, a shawl may be utilized as a scarf, neckerchief or similar accessory, particularly when made from a thin material such as silk or satin.

[0005] A related garment to the shawl is the drape-front cardigan, which is traditionally a loose-fitting open-front sweater with integrated sleeves. FIG. **1** shows one such cardigan.

[0006] These cardigans may be made from the same materials and yarns as shawls, ranging from cotton and wool yarns to more elegant silks and sateen fabrics. Drape-front cardigans such as that shown in FIG. **1** can present a more elegant appearance than a traditional shawl and have the additional benefit of hanging securely on the wearer. Unlike the sleeveless shawl, the drape-front cardigan may include sleeves that provide additional stability and security on the wearer. The wearer is thus able to use both hands providing for a more versatile experience.

[0007] However, many drape-front cardigans suffer from significant drawbacks. As with a shawl, the drape-front cardigan may simply hang open, reducing the heat-retention properties of the garment and perhaps diminishing its stylishness. The drape-front cardigan is worn like a sweater so the wearer must insert the arms into the sleeves to put it on, an additional step not present with a traditional shawl. Further, the drape-front cardigan may lack versatility and cannot be adapted to other uses.

[0008] Combinations have been proposed in which sleeves are integrated into a traditional shawl. Referring to FIG. **2**, one such garment in shown in which two separate sleeve portions are knit and then linked on to the main body portion of the garment. However, these proposals still suffer from significant drawbacks.

[0009] Where sleeve portions are simply formed and attached, the user cannot wear the garment as a shawl since the presence of the sleeve portions interferes with the draping of the shawl on the wearer. The sleeves also inhibit fashioning the garment into an accessory.

[0010] Further, sleeves that are formed and attached to a shawl require additional labor to fabricate the sleeves and then attached them to the main portion of the garment. Additional labor can introduce additional cost to the product.

[0011] Commercially-available knitting processes have generally been limited and are unable to produce an integrated shawl-like garment in which components such as armholes are integrated into a single seamless garment produced in a single step.

[0012] What is needed is a versatile, multi-purpose article that can fill the combined functions of sweater and shawl, and that can be efficiently manufactured.

[0013] What is further needed is a multi-purpose article that can still fill the function of sweater or shawl individually.

[0014] What is further needed is a combined sweater and shawl that presents a clean, stylish appearance.

SUMMARY

[0015] The disclosed technology is a method of manufacturing a multipurpose garment in a seamless fashion, saving time and money, and providing a more durable garment.

[0016] In one implementation, the disclosed technology discloses a method of manufacturing a multipurpose garment. The method can comprise the steps of: knitting a first section **130**, the first section including a plurality of single courses; knitting a second section **131**, the second section including a plurality of double courses; knitting a third section **132**, the third section including a plurality of single courses; knitting a fourth section **133**, the fourth section including a plurality of double courses; and knitting a fifth section **134**, the fifth section including a plurality of single courses, wherein transitions between the first section and the second section, the second section and the third section, the third section and the fourth section, and the fourth section and the fifth section are seamless.

[0017] In some implementations, the knitting direction can comprise the steps of: knitting the section **135**, a plurality of single courses; knitting section **136**, a plurality of double courses; knitting section **137**, a plurality of single courses, wherein transitions between the section **135** and the section **136**, the section **136** and the section **137** are seamless.

[0018] In some implementations, the single courses can be reverse Jersey stitches. In some implementations, the double courses can be Jersey stitches and reverse Jersey stitches. In some implementations, the multipurpose garment **100** can comprise combinations of section **110** being reverse jersey stitches, section **121** being jersey stitches (the reverse side of **120**) and section **123** being jersey stitches (reverse side of **122**).

[0019] In some implementations, the multipurpose garment **100** can comprise combinations of section **110** being jersey stitches, section **121** being reverse jersey stitches (reverse side of **120**) and section **123** being reverse jersey

stitches (reverse side of **122**). In some further implementation, multipurpose garment **100** can comprise combinations of tuck stitches.

[0020] In some implementations, the steps of knitting the double courses further comprise the steps of: knitting a first course of a body portion in a first direction; applying a first transition stitch; knitting a first course of a first sleeve section in a second direction; knitting a second course of a body portion in the second direction; applying a second split transition stitch; knitting a second course of a first sleeve section in a first direction; and repeating the above steps until a sleeve section of a defined number of courses is formed.

[0021] In some implementations, the transition stitch can be a split stitch. In some implementations, the transition stitch can be a tuck stitch. In some implementations, the first course of a body portion and the second course of a body portion can be reverse Jersey stitches. In some implementations, the first course of a sleeve portion and the second course of a sleeve portion can be Jersey stitches. In some implementations, the first course of a body portion and the second course of a body portion can be Jersey stitches. In some implementations, the first course of a sleeve portion and the second course of a sleeve portion can be reverse Jersey stitches.

[0022] In some embodiments, a multimodal garment may include a body portion, a left sleeve portion formed in the elongate body portion substantially parallel to the first and second horizontal edge portions, and/or a right sleeve portion formed in the elongate body portion substantially parallel to the first and second horizontal edge portions. In some embodiments, the body portion may include first and second horizontal edge portions, and first and second vertical edge portions.

[0023] In some embodiments, the left and right sleeve portions are configured as tubes extending outward from adjacent a center vertical axis of the body portion to the vertical edge of the body portion without a visible seam.

[0024] In some embodiments, the body portion, left sleeve portion, and right sleeve portion are formed together using a tubular knitting technique. In some embodiments, the left and right sleeve portions are configured as sewn-on tubes extending outward from adjacent a center vertical axis of the body portion to the vertical edge of the body portion with visible seams. In some embodiments, the body portion, left sleeve portion, and right sleeve portion are formed together using a whole garment seamless knitting technique.

[0025] In some embodiments, a multimodal garment may include a body portion and/or a secondary torso panel formed in the elongate body portion, and integrated into the body portion on at least two sides.

[0026] In some embodiments, each of the left and right sleeve portions are closed on at least one end. In some embodiments, each of the left and right sleeve portions terminate in an integrated mitten or glove portion.

[0027] In some embodiments, the garment is formed from one of natural fibers such as wool, cotton, linen, silk and synthetic fibers such as rayon, nylon and polyester and any blend thereof.

[0028] In some embodiments, such a multimodal garment may further include a decorative adornment, including fringe, jacquard, intarsia, cable knitting, or pointelle textured stitches.

[0029] In some embodiments, a multimodal garment may include a substantially planar body portion and/or a left sleeve portion and a right sleeve portion formed in the planar body portion. In some embodiments, the substantially planar body portion may include at least one edge. In some embodiments, the left and right sleeve portions are configured as tubes extending outward from adjacent a center vertical axis of the planar body portion to an edge of the body portion. In some embodiments, the left and right sleeve portions are integrally formed with the planar body portion in a single process using a tubular knitting technique.

BRIEF DESCRIPTION OF THE DRAWINGS

[0030] The features and advantages of the present disclosure will be more fully understood with reference to the following detailed description when taken in conjunction with the accompanying figures, wherein:

[0031] FIG. **1** shows a prior art design for drape-front cardigan.

[0032] FIG. **2** shows a prior art design for drape-front cardigan in a flattened configuration.

[0033] FIG. **3** shows a multipurpose garment according to embodiments of the invention.

[0034] FIG. **4** shows a front view of a multipurpose garment according to embodiments of the invention, in a different configuration.

[0035] FIG. **5** shows a front view of a multipurpose garment according to embodiments of the invention, in a different configuration.

[0036] FIG. **6** shows a rear view of a multipurpose garment according to embodiments of the invention, in a different configuration.

[0037] FIG. **7** shows a front view of a multipurpose garment according to embodiments of the invention, in a different configuration.

[0038] FIG. **8** shows a front view of a multipurpose garment according to embodiments of the invention, in a different configuration.

[0039] FIG. **9** shows a multipurpose garment in a flattened configuration, according to embodiments of the invention.

[0040] FIG. **10** shows an alternate embodiment of the present invention.

[0041] FIG. **11** shows an alternate embodiment of the present invention in a flattened configuration.

[0042] FIG. **12** shows an exemplary needle for use with embodiments of the invention.

[0043] FIGS. **13***a-b* show exemplary weft knitting and warp knitting.

[0044] FIG. **14** shows exemplary knitting stitches.

[0045] FIG. **15** shows an exemplary appearance of a Jersey stitch.

[0046] FIG. **16***a* shows a multipurpose garment in a flattened configuration.

[0047] FIG. **16** *b* shows a multipurpose garment in a three-dimensional configuration.

[0048] FIG. **17** shows an indication chart for knitting stitches.

[0049] FIG. **18***a* shows a partial view of a multipurpose garment with double courses and transition stitches.

[0050] FIG. **18***b* is a flow chart showing steps for forming double course garment sections.

[0051] FIG. **18***c* shows a partial view of a multipurpose garment with double courses and transition stitches.

[0052] FIG. **18***d* is a flow chart showing steps for forming double course garment sections.

[0053] FIGS. **19-21** show another embodiment of the disclosed invention as a scarf.

[0054] FIGS. **22-23** show another embodiment of the disclosed invention as a hoodie scarf.

[0055] FIGS. **24-25** show another embodiment of the disclosed invention as a turtle-necked shawl **530**

[0056] FIGS. **26-27** show another embodiment of the disclosed invention as a open-neck shawl.

[0057] FIGS. **28-29** show another embodiment of the disclosed invention as a open-neck shawl.

[0058] FIGS. **30-31** show another embodiment of the disclosed invention as an draping, open-neck shawl.

DETAILED DESCRIPTION OF THE INVENTION

[0059] The disclosed technology relates to a method of manufacturing a multipurpose garment in a seamless fashion, saving time and money, and providing a more durable garment.

[0060] In some embodiments, a multimodal garment is described in which sleeve portions are integrated into the body using a tubular knitting-in technique.

[0061] Referring to FIG. **3**, an exemplary garment is shown in a position of use. Garment **300** may comprise an elongate body portion **310** formed from one or more pieces of material that is generally rectangular in shape defined by right and left vertical edge portions **320**, **330** and top and bottom horizontal edge portions **340** and **350**. In alternate embodiments, shapes beyond rectangular may be utilized such as circular and polygonal.

[0062] It will be appreciated by those of skill in the art that a wide variety of sizes and shapes may be used for elongate body portion **310**. In a preferred embodiment, a rectangular body portion is contemplated, of a length sufficient to cover the wearer and appropriate to the desired style. It should be noted that in differing embodiments, the rectangular-shaped elongate body portion may be oriented such that the longer edges are aligned with the horizontal plane, or alternatively, that the longer edges are aligned with the vertical plane. In some embodiments, other shapes may be used depending on the application, including polygonal, circular, oval, and elliptical, among others.

[0063] In some embodiments, sleeve portions **360** and **370** may be formed in the garment. A left sleeve portion **370** may be defined along a segment of top horizontal edge portion **340**, and a corresponding right sleeve portion **360** may be defined along a segment of top horizontal edge portion **340**. In some embodiments, left and right sleeve portions **360**, **370** may take the form of mirror opposites of each other. In some embodiments, left and right sleeve portions **360**, **370** are designed to accommodate the left and right arms of the wearer, respectively, and extend to a length that may vary with the size of the garment (e.g., S, M, L, XL) or be based upon the average size of a wearer. The left and right sleeve portions **360**, **370** may be open-ended to allow the hands of the wearer to protrude. In alternate embodiments, left and right sleeve portions **360**, **370** may be closed-ended and capped with an integrated mitten or glove for additional warmth.

[0064] A wide variety of materials may be utilized in garment **300**, both in the body portion **310** and sleeve portions **360**, **370**. In a preferred embodiment, a wool sweater knit may be used. In alternate embodiments, fabrics, such as cotton, linen, silk or other woven fabrics may be utilized.

[0065] As shown in FIG. **3**, in use, the arms of the wearer may be inserted through left and right sleeve portions **360**, **370** and the garment then may drape.

[0066] Additional stylistic elements may be incorporated into garment **300**. For example, decorative adornments such as fringe at right and left vertical edge portions **320**, **330** may be incorporated into body portion **310**. Additional examples of textures for the body portion **310** and sleeve portions **360**, **370** may include jacquard, cable or pointelle textured stitches.

[0067] FIGS. **4-9** show an embodiment of the invention in various stages and configurations of use. FIG. **4** shows an embodiment **400** in a shawl configuration, with the wearer's arms inserted through the sleeve portions and the garment wrapped tightly around the shoulders of the wearer. The garment in this configuration is secured by the wearer's arms, minimizing or eliminating instances of the garment falling off the body of the wearer. Since the wearer is not utilizing their hands to secure the garment, the hands are free for other purposes.

[0068] FIGS. **5-6** show front and rear views of an embodiment in a multi-purpose garment configuration with an open front. The garment is sloped to drape more freely than what is shown in FIG. **4**, while remaining secure on the wearer's body with the hands free.

[0069] FIG. **7** shows a further embodiment of the invention in which the garment takes the form of a scarf. Because of the integrated left and right sleeve portions formed with the garment, there are no loose-hanging sleeve portions that would interfere with the scarf configuration, either mechanically or visually.

[0070] Lastly, FIG. **8** shows an embodiment in which the garment is worn as a shawl with one side arm inserted into a sleeve portion and wrapped around the other side to create an asymmetrical configuration. In a preferred embodiment, the garment of FIG. **3**, can be utilized in each of these configurations, providing a varied experience for the wearer without requiring distinct garments.

[0071] Referring to FIG. **9**, garment **900** of FIG. **3** is shown laid flat. As with the view shown in FIG. **3**, FIG. **9** comprises an elongate body portion **910**. Body portion **910** may be formed from one or more pieces of material that is generally rectangular in shape defined by top and bottom vertical edge portions **920**, **930** and top and bottom horizontal edge portions **940**, **950**.

[0072] Sleeve portions **960**, **970** may be formed in the garment and defined as a tubular knit portion fabricated according to the process described below. Each sleeve portion has an opening **960'**, **970'** that is proximal to the wearer. Corresponding openings **960"**, **970"** are formed opposite the corresponding openings **960'**, **970'** to form a tube through which the arms of the wearer may be inserted.

[0073] In some embodiments, left and right sleeve portions **960**, **970** may be formed with garment **900** during manufacturing using a tubular knit-in technique that enables three-dimensional knitting of the complete garment including, for example, tubular knitting to form **960**, **970** in the same process as with the main body portion.

[0074] Alternatively, sleeve portions **960**, **970** may be laterally linked-on by linking machine or sewn-on by sewing machine leaving openings **960'**, **970'** and corresponding opening **960"**, **970"**.

[0075] Various alternate embodiments of the invention are contemplated to fulfill various stylistic or manufacturing requirements.

[0076] For example, referring to FIG. **10**, an integrated garment **1000** is shown. Garment **1000** incorporates not only the shawl portion **1010** described above, but also a short portion **1020** that has been knit with the garment as a single unit. Referring to the plan view of FIG. **11**, as with the prior embodiments, garment **1100** may comprise an elongate body portion **1110** formed from one or more pieces of material that is generally rectangular in shape defined by top and bottom vertical edge portions **1120**, **1120'** and top and bottom horizontal edge portions **1130** and **1130'**. Arm openings **1160**, **1170** may be formed in secondary portion **1150**.

[0077] In some embodiments, a secondary portion **1150** may be formed in the garment. In a preferred embodiment, secondary portion **1150** may be formed of the same material as body portion **1110** by tubular knit-in technique. Secondary portion **1150** may be attached laterally, linked-on by linking machine or sewn-on by sewing machine on two sides leaving open a top neck portion **1150'** and bottom torso portion **1150"**. Arm openings **1160**, **1170** may be provided for receiving the wearer's arms.

[0078] In a preferred embodiment, the entire garment **1100** is formed from a tubular or seamless knitting technique and knit in a single manufacturing step, which can minimize labor and cost, and also provide for a more attractive product. Traditional commercial knitting processes have generally been found to be unsuitable for producing such a garment. However, advances in mechanized knitting technology have made production of the embodiments shown herein possible.

[0079] It has been found that machines such as the Shima Seiki Wholegarment Computerized Flat Knitting Machine (Mach2XS) and the Stoll Knit and Wear series of machines are well-suited for use with the present invention.

[0080] Generally speaking, knitting involves interlacing yarn or thread in a series of connected loops, which are called stitches. Arrays of needles are organized into beds, which slide up or down to carry and transfer the yarn or thread. Needles may be curved or straight, and may contain a latch to hook the yarn. An exemplary latch needle is shown in FIG. **12**.

[0081] Cams typically cause the needles in the bed to be raised and lowered. A carriage traverses the needle beds to raise and lower the needles according to the desired pattern. Successive loops in the fabric or garment are pulled through an existing loop and this process is repeated until completion.

[0082] As a needle is raised by a cam, the downward hook passes by the current yarn segment before hooking that yarn segment on the lowering movement. The latch of the needle catches the yarn and holds the yarn in place as another active yarn segment is passed across, pulling the yarn through the prior loop or stitch. The needle then releases the current loop or stitch on the raising movement. The current loops, known as "active loops," are held on a needle until another loop can be passed through them to complete the stitch.

[0083] In embodiments that utilize the whole garment machines capable of seamless knitting, these machines are specially configured so that these stitches can be passed from one bed to the other and the beds can be moved in relation to one another. This transfer ability permits the integration of components such as pockets and lateral sleeves into the garment as it is knit.

[0084] In some embodiments, components of the garment (e.g., sleeves) may be formed separately (with the remainder of the garment formed from the tubular or seamless technique) and joined to the main garment using a linking technique.

[0085] Linking is a method of seaming/attaching pieces of a garment together after the pieces have been knitted on a flat-bed knitting machine. It will be appreciated by those of skill in the art that the linking process requires a skilled operator, and is used mainly for fully-fashioned knitted apparel. In the linking process, a slacker course of loops of yarn is created on the linking machine, which connects two pieces of fabric together.

[0086] In another implementation, the disclosed garment can be manufactured using a weft double-bed knitting machine or a weft flat-bed knitting machine known in the art. Weft knitting is a horizontal stitch process that knits using a left to right and right to left motion, e.g., shown in FIG. **13***a*, as opposed to warp knitting which is a vertical stitch process in a single direction, e.g., shown in FIG. **13***b*.

[0087] There are numerous stitches that can be knitted using the weft knitting process, e.g., a Jersey stitch, a reverse Jersey Stitch, a tuck stitch, a float stitch, and a split stitch, to name a few. Examples of these stitches are shown in FIG. **14**.

[0088] The general appearance of a Jersey stitch is shown in FIG. **15**. Jersey stitches are made of a series of horizontal courses stacked upon one another. The Jersey stitch forms a matrix of courses (horizontal rows) and wales (vertical columns).

[0089] By utilizing a weft double-bed knitting machine or a weft flat-bed knitting machine, a disclosed garment **100**, as shown in FIG. **16**, can be produced in a single knitting process and form a seamless transition from a body portion **110** to sleeve portions **120**, **122** (reverse sides **121**, **123**, respectively). This garment is also more durable than traditional knitting processes.

[0090] During manufacture, the knitting machine can form single courses and double courses as programmed by a user to form the disclosed garment **100**. For example, the disclosed garment **100** can be broken into five sections **130**-**134**. The first section **130** can be a single course knit, the second section **131** can be a double course knit, the third section **132** can be a single course knit, the fourth section **133** can be a double course knit and the fifth section **134** can be a single course knit.

[0091] During the knitting process, the first section **130** can be a single course of a reverse Jersey stitch, the second section **131** can be a double course of a Jersey stitch and a reverse Jersey stitch, the third section **132** can be a single course of a reverse Jersey stitch, the fourth section **133** can be a double course of a Jersey stitch and a reverse Jersey stitch and the fifth section **134** can be a single course of a reverse Jersey stitch. Please note that other stitches can be used and are contemplated.

[0092] The knitting machine can begin its process by forming the first section **130** of reverse Jersey stitches in a weft knit that allows the knitting machine to move from left to right and right to left to form the reverse Jersey stitch,

shown in FIG. **13***a*. The first section **130** can be any number of courses chosen for design purposes, e.g., the first section can contain from 1-400 courses.

[0093] The knitting machine can seamlessly transition from the first section **130** to the second section **131**. In the second section **131**, two courses of different stitches are knitted with one on top of the other, a first course for the body portion **110** and a second course for the first sleeve section **120**.

[0094] As shown in FIG. **18***b* and using FIG. **17** as a guide, the knitting machine can be programmed to form these two courses. FIGS. **16***a* and **18***a* are for illustrative purposes and directions of the knit may be changed based on the orientation of the garment within the knitting machine.

[0095] In Step 1, a full course of the body portion **110** is knitted from left to right (line A to line B) and knit reverse jersey stitch in the back-needle bed. In Step 2, the knitting machine (without knitting) moves from right to left to line C (a right side of the sleeve portion **120**). The knitting machine applies a first split stitch **140**. In Step 3, from that first split stitch **140**, a first course of the sleeve portion **120** can be knitted from right to left (line C to line D) using a Jersey stitch in the front needle bed. (The first course of the sleeve portion **120** can have a width (e.g., 1-200 wales) determined by design). Once the first course of the sleeve portion **120** is complete, the knitting machine, in Step 4, without knitting moves from left to right (line D to line B). In Step 5, a second full course of the body portion **110** is knitted from right to left (line B to line A) in the back-needle bed. In Step 6, the knitting machine (without knitting) moves from left to right to line D (a left side of the sleeve portion **121**). The knitting machine then applies a second split stitch **141**. In Step 7, from that second split stitch **141**, a second course of the sleeve portion **120** can be knitted from left to right (line D to Line C) using a Jersey stitch having a length as predetermined by design. Once complete, in Step 8, the knitting machine without knitting moves from right to left (line C to line A). The above steps are repeated until the first sleeve portion with a height determined by design is formed (e.g., 1-200 courses).

[0096] The knitting machine then seamlessly transitions from the second section **131** to the third section **132**. The third section can be a series of single course of reverse Jersey stitches with a height determined by design (e.g., 1-800 courses).

[0097] The knitting machine can seamlessly transition from the third section **132** to the fourth section **133**. In the fourth section **133**, like the second section **131**, two courses are to be knitted on top of one another.

[0098] As shown in FIG. **18***b* and using FIG. **17** as a guide, the knitting machine can be programmed to form these two courses. In Step 1, a full course of the body portion **110** is knitted from left to right (line A to line B) and knit reverse Jersey stitch in the back-needle bed. In Step 2, the knitting machine (without knitting) moves from right to left to line C (a right side of the sleeve portion **122**). The knitting machine applies a first split stitch **140**. In Step 3, from that first split stitch **140**, a first course of the sleeve portion **122** can be knitted from right to left (line C to line D) using a Jersey stitch in the front needle bed. (The first course of the sleeve portion **122** can have a width (e.g., 1-200 wales) determined by design). Once the first course of the sleeve portion **122** is complete, the knitting machine, in Step 4, without knitting moves from left to right (line D to line B). In Step 5, a second full course of the body portion **110** is knitted from right to left (line B to line A) in the back-needle bed. In Step 6, the knitting machine (without knitting) moves from left to right to line D (a left side of the sleeve portion **122**). The knitting machine then applies a second split stitch **141**. In Step 7, from that second split stitch **141**, a second course of the sleeve portion **122** can be knitted from left to right (line D to Line C) using a Jersey stitch having a length as predetermined by design. Once complete, in Step 8, the knitting machine without knitting moves from right to left (line C to line A). The above steps are repeated until the second sleeve portion with a height determined by design is formed (e.g., 1-200 courses).

[0099] The knitting machine then seamlessly transitions from the fourth section **133** to the fifth section **134**. The fifth section can be a series of single course of reverse Jersey stitches with a height determined by design (e.g., 1-800 courses).

[0100] During the knitting process these steps are repeated allowing the sleeve portions to be knitted seamlessly. That is, the knitting machine seamlessly transitions from the section **137** to the section **136** and from the section **136** to the section **135**. There are no visible seams on Line D and line C due to the split stitches seamlessly connecting the body portion **110** and the sleeve portion **121**.

[0101] As shown in FIG. **18***d* and using FIG. **17** as a guide, knitting machine sequence can be programmed differently. Please see FIGS. **18***c* and **18***d*: In step 1, knitting a first course of a sleeve portion (line B to line C) in a first direction in the front machine bed. In step 2, another course of sleeve portion (line C to line D) can be knitted in the second direction in the back-machine bed. In step 3, the knitting a first course of a body portion (line A to line D) in the back-machine bed in a first direction, ending with first split stitch **148**. In step 4, the rest of the first course of a body portion is knitted on the back-machine bed (from line B to line C) in a second direction, ending with second split stitch **149**. Step 4 is the right side of the sleeve **120** and repeating the above steps until a sleeve section of a defined number of courses is formed.

[0102] During the knitting process these steps are repeated allowing the sleeve portions to be knitted seamlessly. That is, there are no visible seams on Line D and line C due to the transition stitches seamlessly connecting the body portion **110** and the sleeve portion **120**.

[0103] FIGS. **19-31** show different configurations of the multipurpose garment formed by the steps discussed above.

[0104] FIGS. **19-21** show an alternate embodiment of the disclosed invention as a scarf with head opening **500**. The scarf **500** has a body **501**, a first sleeve **502**, a second sleeve **503** and an opening **504** for a wearer's head. The scarf **500** can be knitted in a multicolor scheme as shown in FIG. **20**. In use, a wearer can use the scarf **510** in multiple fashions as shown in FIG. **21**.

[0105] FIGS. **22-23** show another embodiment of the disclosed invention as a hoodie scarf **520**. The hoodie scarf **520** has a body **521**, a first sleeve **522**, a second sleeve **523**, an opening **524** for a wearer's head and a hood **525**. In use, a wearer can use the hoodie scarf **520** in multiple fashions as shown in FIG. **23**.

[0106] FIGS. **24-25** show another embodiment of the disclosed invention as a turtle-necked shawl **530**. The turtle-neck shawl **530** has a body **531**, a first sleeve **532**, a second sleeve **533** and an opening **534** for a wearer's head and a

turtle neck **536**. In use, a wearer can use the turtle-neck shawl **530** as shown in FIG. **25**.

[0107] FIGS. **26-27** show another embodiment of the disclosed invention as an open-neck shawl **540**. The open-neck shawl **540** has a body **541**, a first sleeve **542**, a second sleeve **543** and an opening **544**. In use, a wearer can use the open-neck shawl **540** as shown in FIG. **27**.

[0108] FIGS. **28-29** show another embodiment of the disclosed invention as an open-neck shawl **550**. The open-neck shawl **550** has a body **551**, a first sleeve **552**, a second sleeve **553**, an opening **554** and a hood **555**. In use, a wearer can use the open-neck shawl **550** as shown in FIG. **29**.

[0109] FIGS. **30-31** show another embodiment of the disclosed invention as a draping, open-neck shawl **560**. The open-neck shawl **560** has a body **561**, a first sleeve **562**, a second sleeve **563** and an opening **564**. The body **561** can have three pieces **561***a*, **561***b*, **561***c*. In use, a wearer can use the open-neck shawl **560** as shown in FIG. **31**.

[0110] It will be understood that there are numerous modifications of the illustrated embodiments described above which will be readily apparent to one skilled in the art, such as any other combinations of features disclosed herein that are individually disclosed or claimed herein, explicitly including additional combinations of such features. These modifications and/or combinations fall within the art to which this invention relates and are intended to be within the scope of the claims, which follow. It is noted, as is conventional, the use of a singular element in a claim is intended to cover one or more of such an element.

1. A method of manufacturing a multipurpose garment comprising the steps of:
- knitting a first section, the first section including a plurality of single courses;
- knitting a second section, the second section including a plurality of double courses;
- knitting a third section, the third section including a plurality of single courses;
- knitting a fourth section, the fourth section including a plurality of double courses; and
- knitting a fifth section, the fifth section including a plurality of single courses,
- wherein transitions between the first section and the second section, the second section and the third section, the third section and the fourth section, and the fourth section and the fifth section are seamless.

2. The method of claim **1** wherein the multipurpose garment includes a body section and at least two sleeve portions.

3. The method of claim **2** wherein the at least two sleeve portions are seamlessly knitted to the body portion.

4. The method of claim **3** wherein the multipurpose garment seamlessly transitions from the body portion to the at least two sleeve portions and from the at least two sleeve portions to the body portion due to transition stitches connecting the body portion and the at least two sleeve portions.

5. The method of claim **4** wherein the transition stitches are split stitches or tuck stitches.

6. The method of claim **1** wherein the plurality of single courses are reverse Jersey stitches.

7. The method of claim **1** wherein the plurality of double courses are Jersey stitches and reverse Jersey stitches.

8. The method of claim **1** wherein the plurality of single courses are mixtures or variations of jersey stitches, tuck stitches or float stitches.

9. The method of claim **8** wherein the plurality of double courses are mixtures or variations of jersey stitches, tuck stitches or float stitches.

10. The method of claim **1** wherein the steps of knitting the second section and the fourth section further comprises the steps of:
- knitting a first course of a body portion in a first direction;
- applying a first transition stitch;
- knitting a first course of a first sleeve section in a second direction;
- knitting a second course of the body portion in the second direction;
- applying a second transition stitch;
- knitting a second course of the first sleeve section in the first direction; and
- repeating the above steps until the second section and the fourth section of the first sleeve section are a defined number of courses.

11. The method of claim **10** wherein the transition stitch is a split stitch or a tuck stitch.

12. The method of claim **11** wherein the first course of the body portion and the second course of the body portion are reverse Jersey stitches.

13. The method of claim **12** wherein the first course of the first sleeve portion and the second course of the first sleeve portion are Jersey stitches.

14. The method of claim **13** wherein the plurality of single courses are mixtures or variations of jersey stitches, tuck stitches or float stitches.

15. The method of claim **14** wherein the plurality of double courses are mixtures or variations of jersey stitches, tuck stitches or float stitches.

16. The method of claim **1** wherein the steps of knitting the double courses further comprises the steps of:
- knitting a first course of a sleeve portion in a first direction in a front machine bed;
- knitting a second course of the sleeve portion in a second direction in a back-machine bed
- knitting a first course of a body portion in the first direction in the back-machine bed and ending with a first transition stitch;
- knitting a second course of the body portion on the back-machine bed in a second direction and ending with a second transition stitch; and
- repeating the above steps until the sleeve portion is a defined number of courses and transition stitches seamlessly connect the body portion and the sleeve portion.

17. A multipurpose garment comprising:
- a first section including a plurality of single courses;
- a second section including a plurality of double courses;
- a third section including a plurality of single courses;
- a fourth section including a plurality of double courses; and
- a fifth section including a plurality of single courses, wherein transitions between the first section and the second section, the second section and the third section, the third section and the fourth section, and the fourth section and the fifth section are seamless.

18. The method of claim **17** wherein the multipurpose garment includes a body section and at least two sleeve portions.

19. The method of claim **18** wherein the sleeve portions are seamlessly knitted to the body portion.

20. The method of claim **19** wherein the multipurpose garment seamlessly transitions from the body portion to the sleeve portion and from the sleeve portion to the body portion due to transitions stitches connecting the body portion and the sleeve portion.

* * * * *