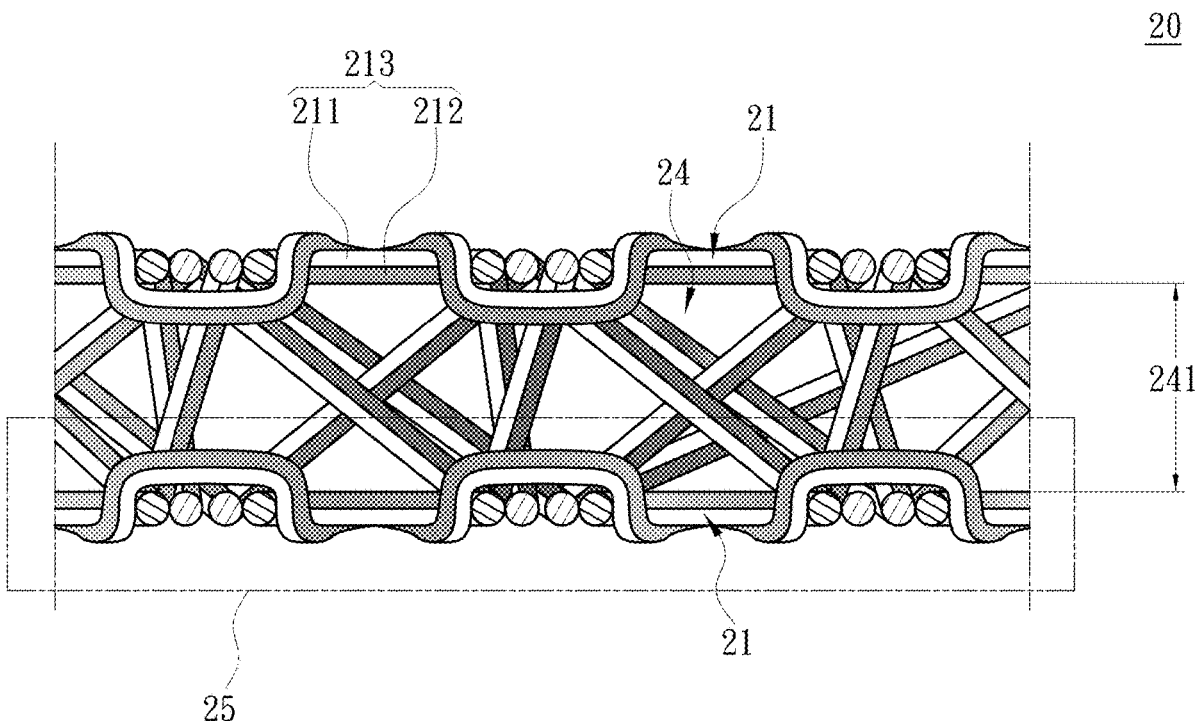




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A method for manufacturing a water-penetration-preventing double-layer fabric and a double-layer fabric. The double-layer fabric includes two surface layer textures and a cross-linked texture. The two surface layer textures can be respectively formed by a base yarn and a fusible yarn, or each of the two surface layer textures includes the base and fusible yarns. A melting point of the base yarn is higher than that of the fusible yarn, one of the surface layer textures is heated and pressed to melt the fusible yarn to form a barrier layer, the cross-linked texture cross-links the surface layer textures, a space between the surface layer textures is formed with the cross-linked texture provided with a yarn-stacked thickness by a tuck knitting or a transfer knitting, and an increased temperature of the surface layer texture without heating and pressing is not higher than a melting point of the fusible yarn.



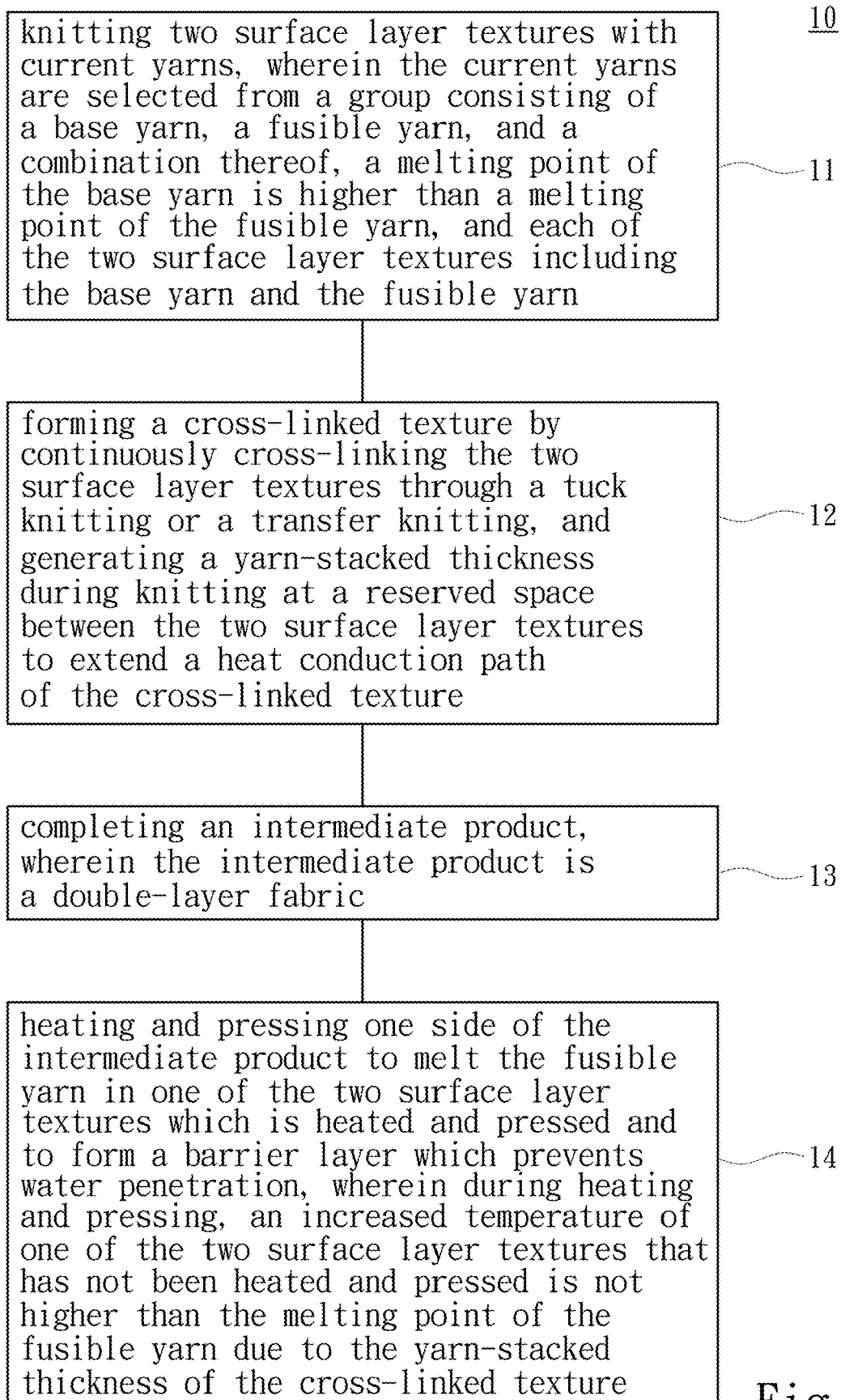


Fig. 1

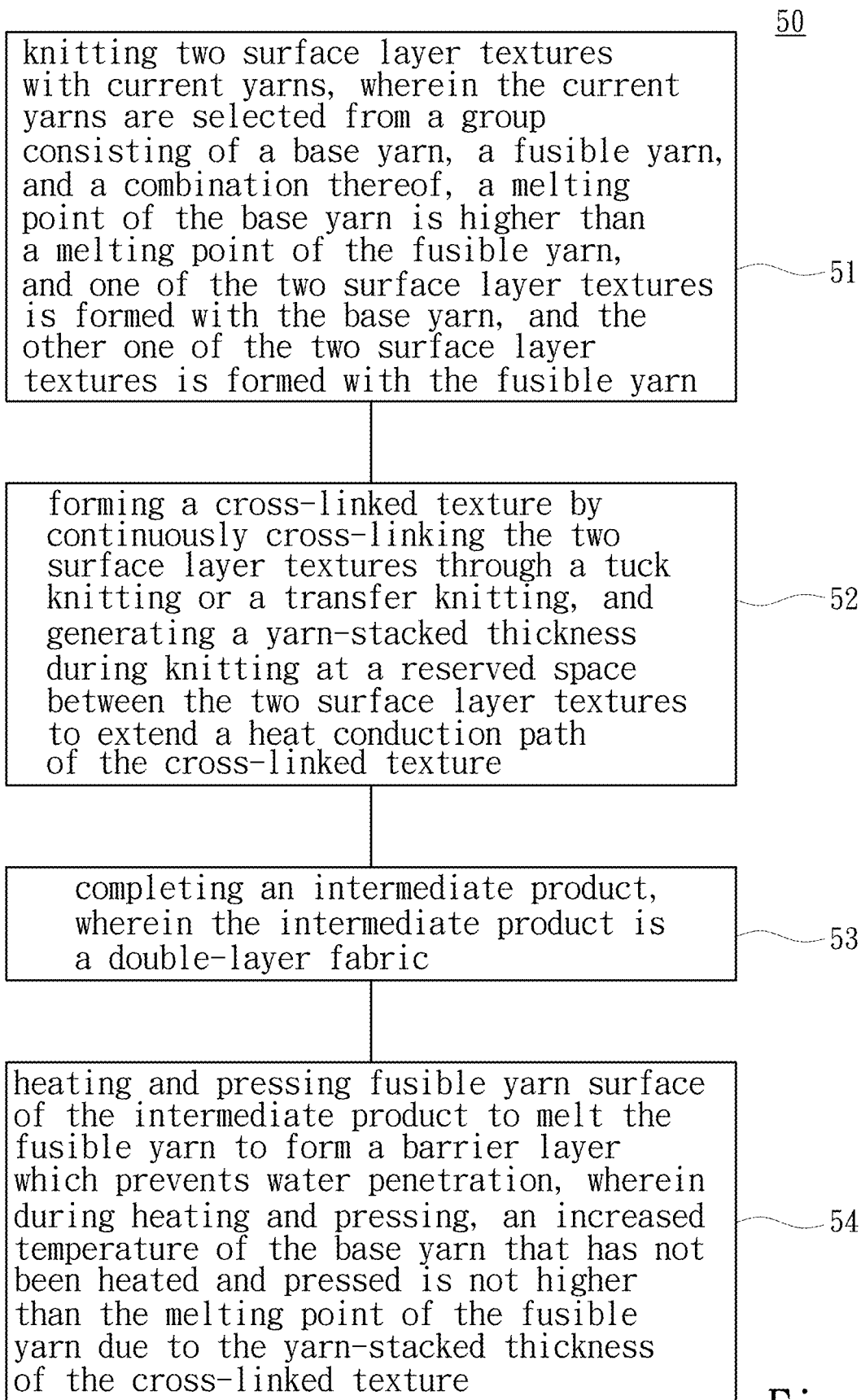


Fig. 2

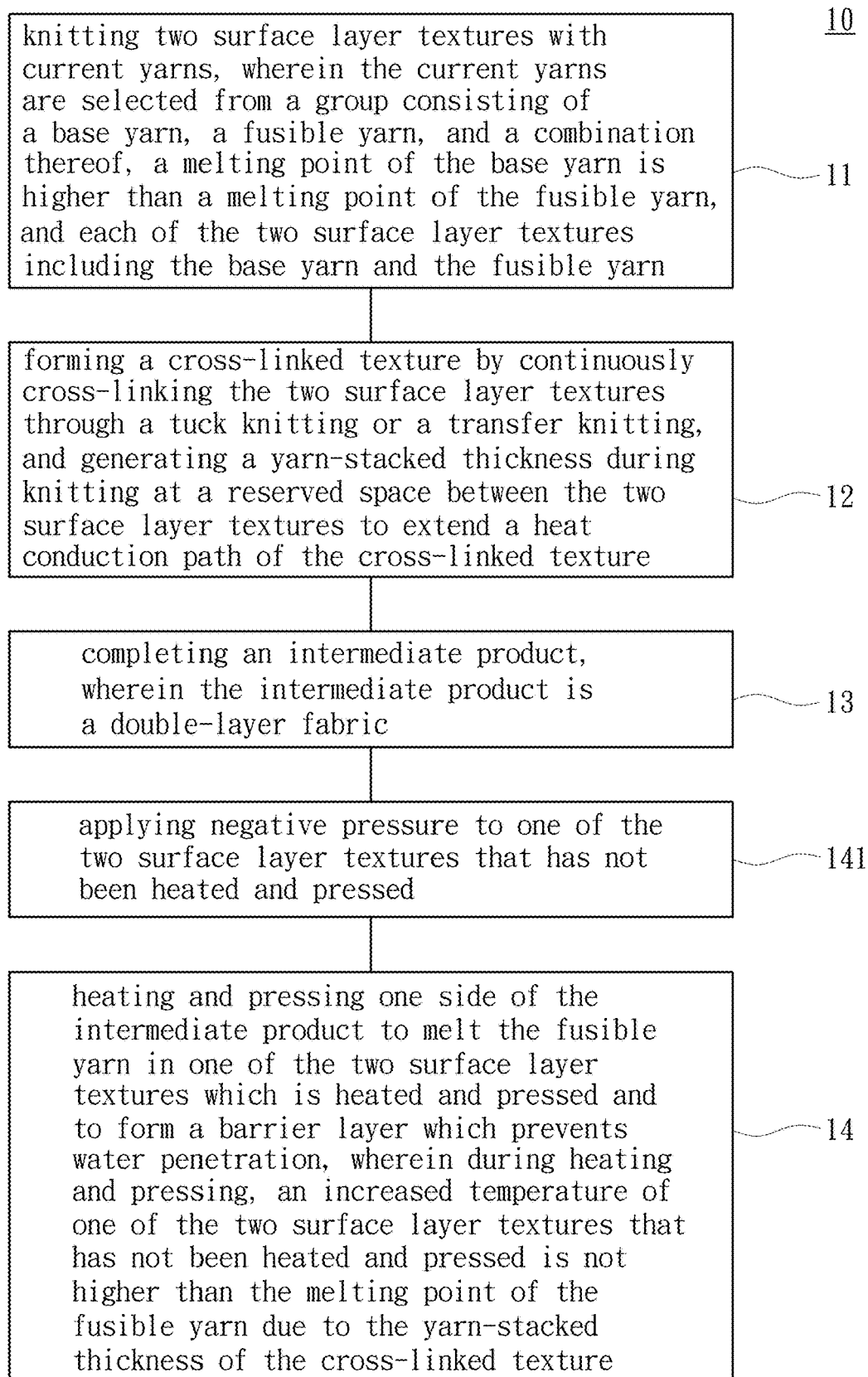


Fig. 3

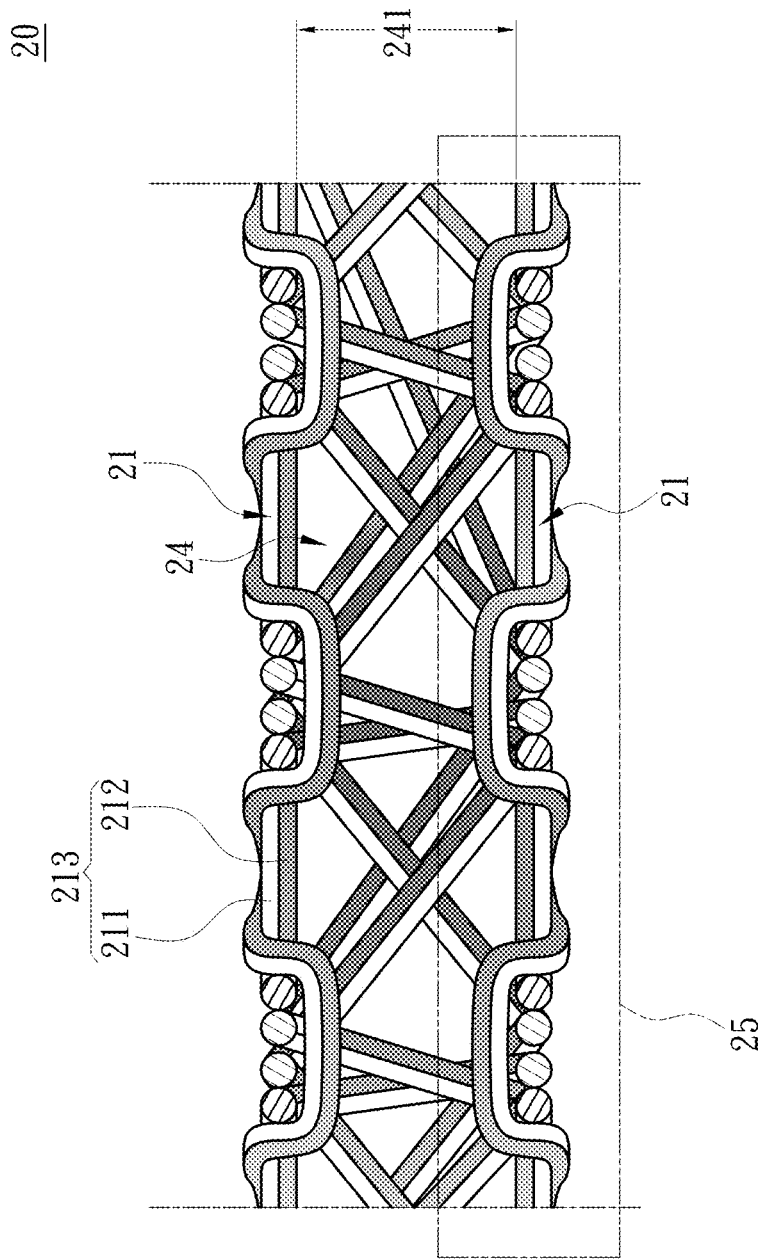


Fig. 4

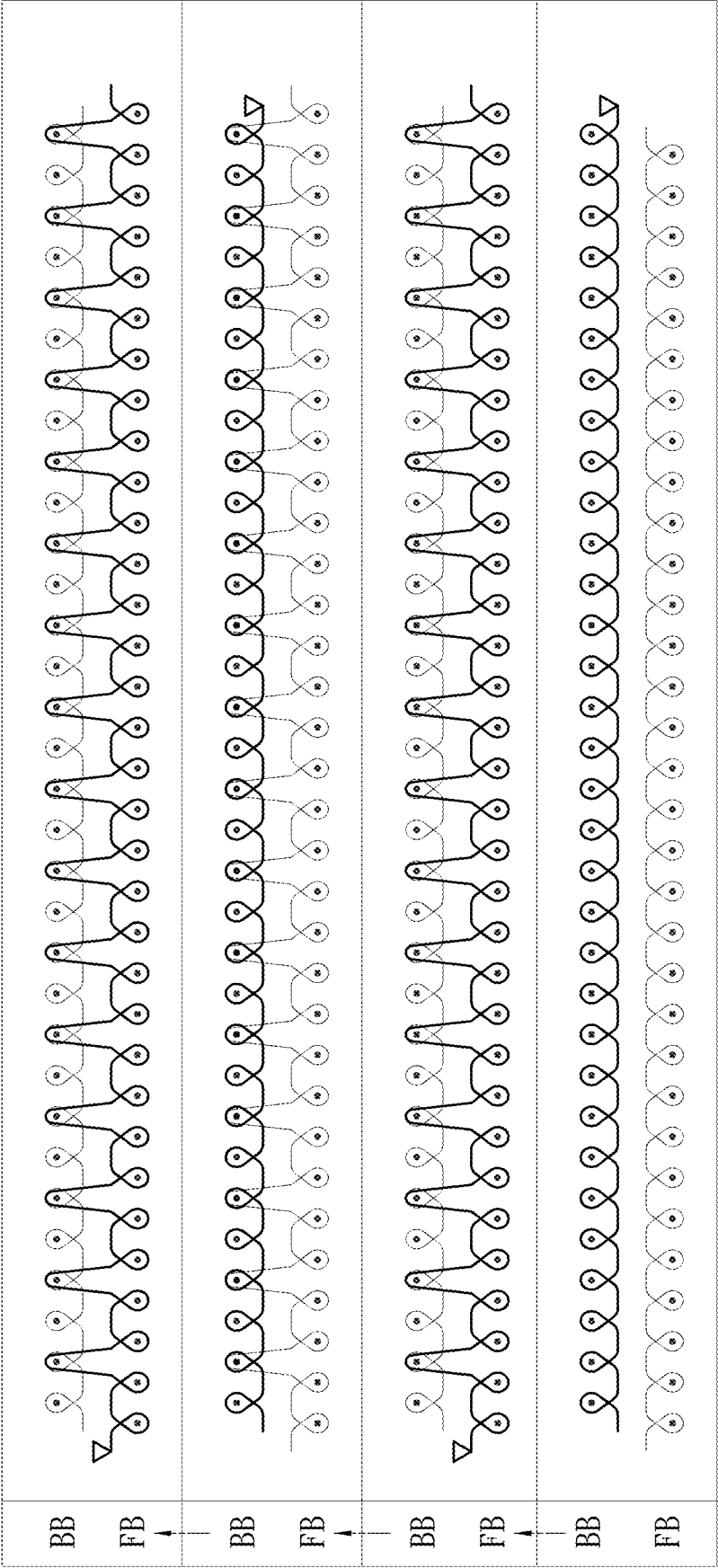


Fig. 5

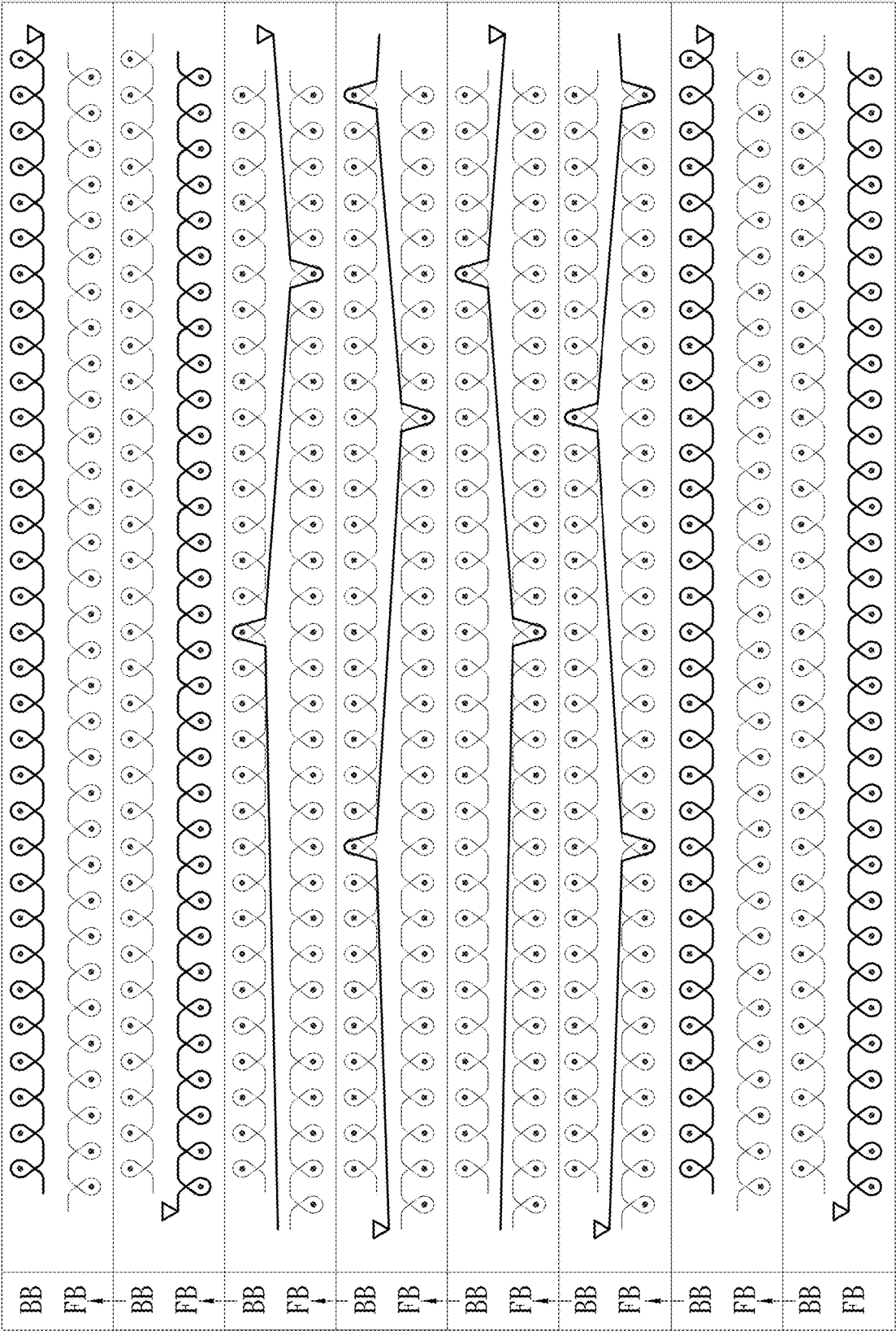


Fig. 6

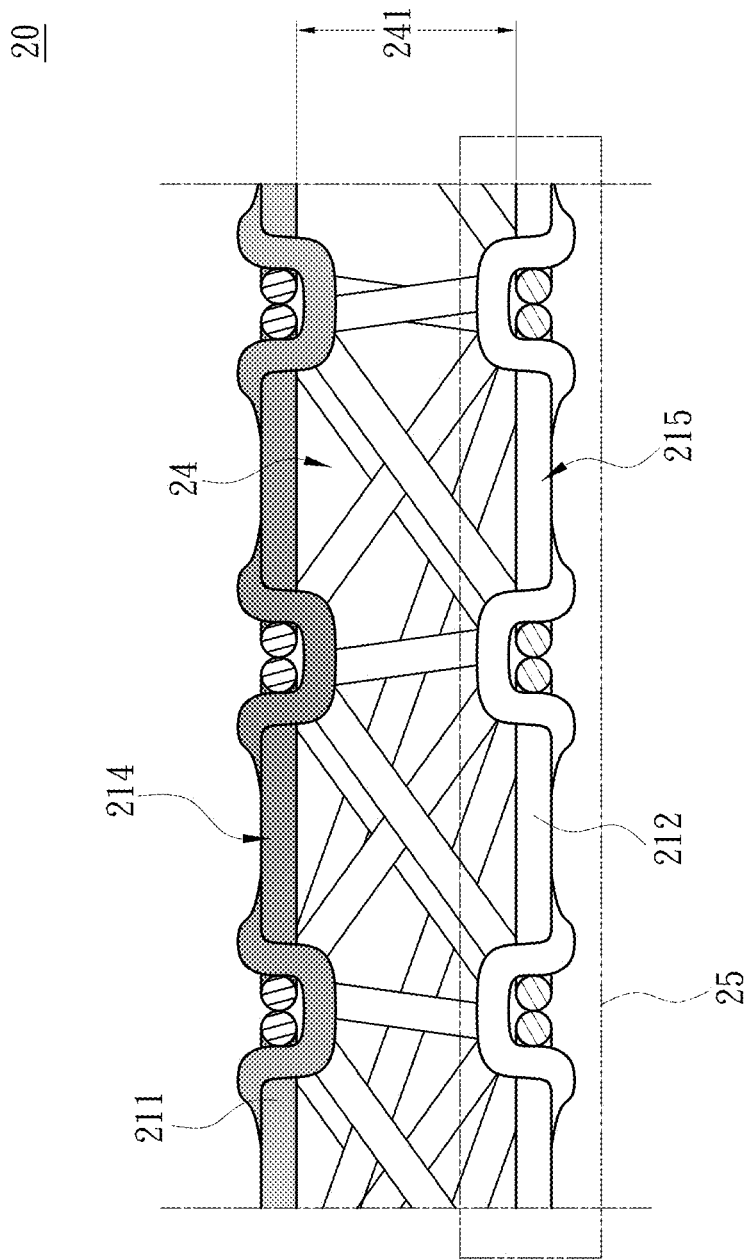


Fig. 7

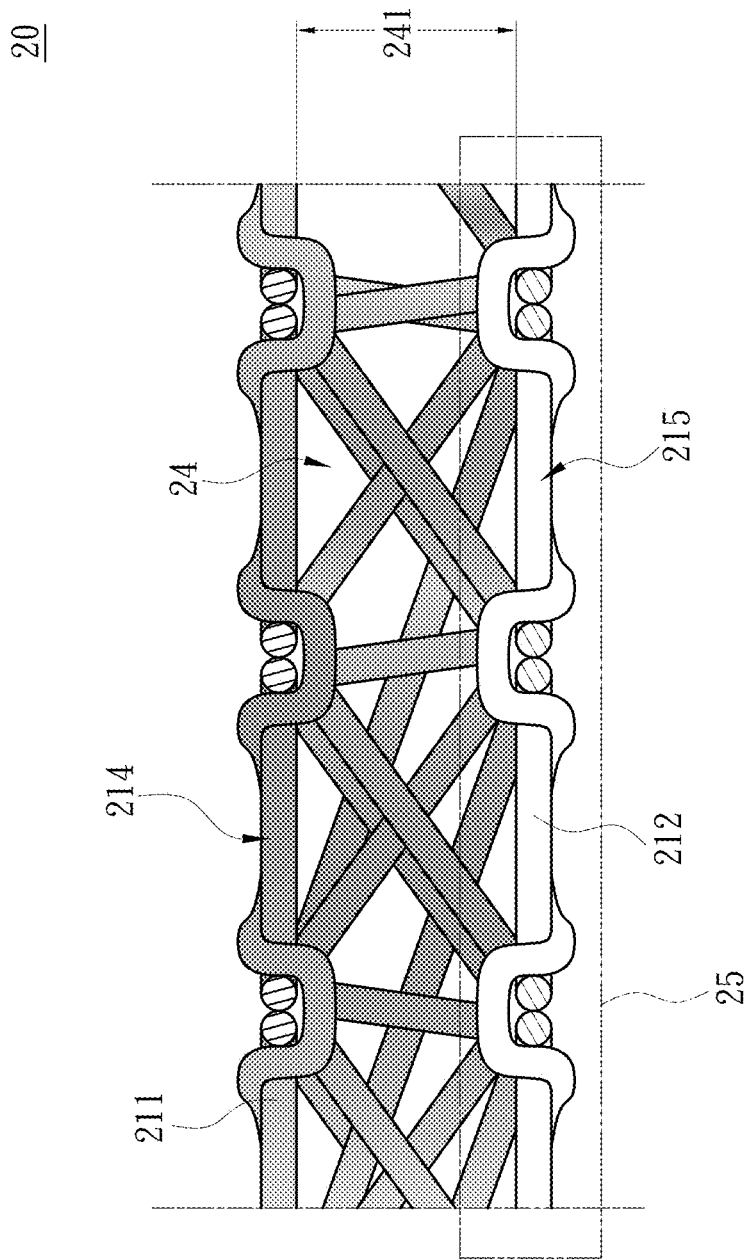


Fig. 8

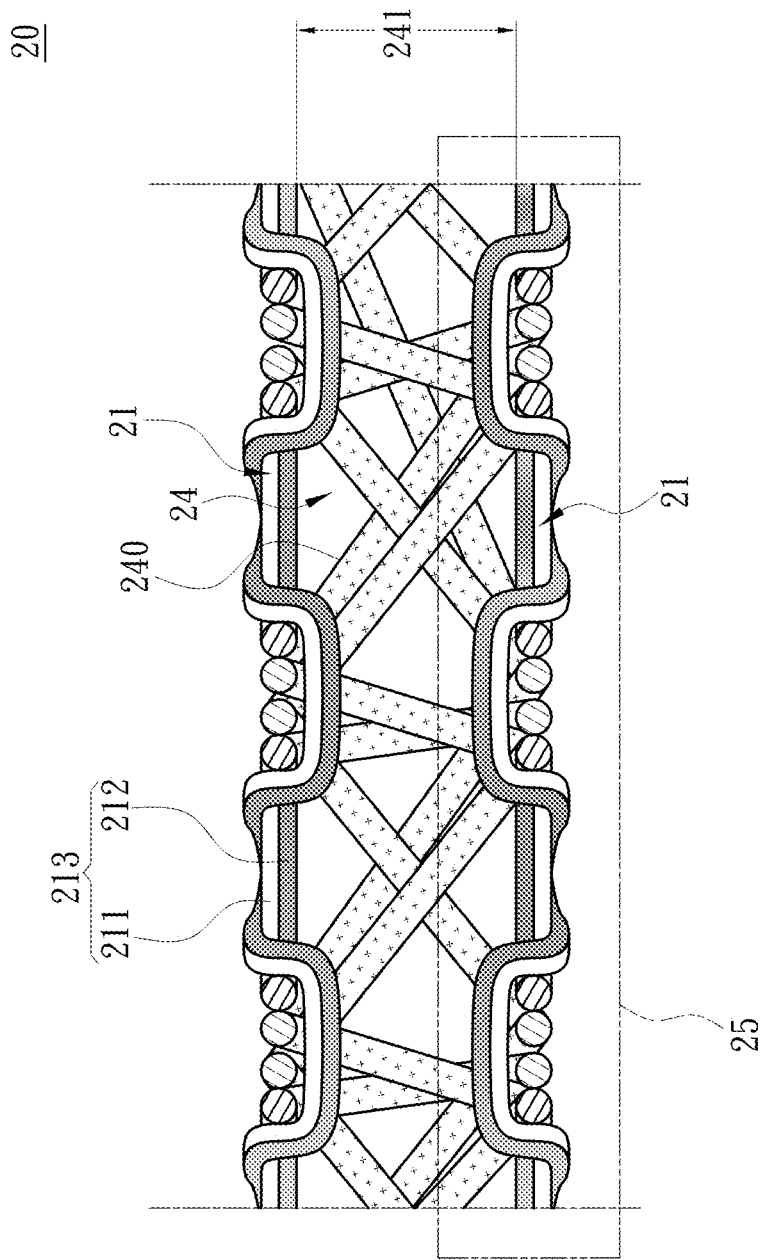


Fig. 9

**METHOD FOR MANUFACTURING
WATER-PENETRATION-PREVENTING
DOUBLE-LAYER FABRIC AND
DOUBLE-LAYER FABRIC**

FIELD OF THE INVENTION

[0001] The present invention relates to a method for manufacturing a water-penetration-preventing double-layer fabric and a double-layer fabric, and more particularly to a method for heating and melting one of surface layer textures to form a barrier layer for manufacturing a double-layer fabric capable of preventing water penetration and a double-layer fabric.

BACKGROUND OF THE INVENTION

[0002] According to investigation, there are at least two types of conventional waterproof fabrics, one type is products made of GORE-TEX film. This type of product is coated with GORE-TEX film on a surface of the fabric to achieve water blocking effect. However, GORE-TEX film tends to lose its waterproof effect after a long time usage, and the materials used in GORE-TEX film are special, which make the costs of waterproof fabrics made of GORE-TEX film expensive.

[0003] In this regard, the industry has developed waterproof glue or waterproof film made of plastic materials. Although the cost of this type of waterproof glue or waterproof film is lower than that of GORE-TEX film and can be commonly found in the market, however, after this type of fabric is coated with waterproof glue or waterproof film, the fabric will harden as the waterproof glue or waterproof film cures, causing the consumers to be unable to have a good, comfortable and soft feeling with this type of waterproof fabric worn on the body.

SUMMARY OF THE INVENTION

[0004] A main object of the present invention is to solve the problems of aging or limited effectiveness over a period of time, and high cost of the conventional GORE-TEX film.

[0005] Another object of the present invention is to solve the problem that the waterproof mechanism adopted by a waterproof fabric being incapable of providing a feeling of softness and comfort.

[0006] In order to achieve the above objects, the present invention provides a method for manufacturing a water-penetration-preventing double-layer fabric, comprising steps of:

[0007] step one: knitting two surface layer textures with current yarns, wherein the current yarns are selected from a group consisting of a base yarn, a fusible yarn, and a combination thereof, a melting point of the base yarn is higher than a melting point of the fusible yarn, and the two surface layer textures are selected from a first implementation type and a second implementation type, wherein:

[0008] in the first implementation type, each of the two surface layer textures comprises the base yarn and the fusible yarn; and

[0009] in the second implementation type, one of the two surface layer textures is formed with the base yarn, and the other one of the two surface layer textures is formed with the fusible yarn;

[0010] step two: forming a cross-linked texture by continuously cross-linking the two surface layer textures

through a tuck knitting or a transfer knitting, and generating a yarn-stacked thickness during knitting at a reserved space between the two surface layer textures to extend a heat conduction path of the cross-linked texture;

[0011] step three: completing an intermediate product, wherein the intermediate product is a double-layer fabric; and

[0012] step four: heating and pressing one side of the intermediate product to melt the fusible yarn in one of the two surface layer textures which is heated and pressed and to form a barrier layer which prevents water penetration, wherein during heating and pressing the cross-linked texture, an increased temperature of one of the two surface layer textures that has not been heated and pressed is not higher than the melting point of the fusible yarn due to the yarn-stacked thickness of the cross-linked texture.

[0013] In one embodiment, in step two, the cross-linked texture is formed with the current yarns used for knitting the two surface layer textures or formed with an another yarn additionally fed.

[0014] In one embodiment, the another yarn additionally fed is selected from a group consisting of a first yarn type, a second yarn type and a third yarn type, wherein:

[0015] in the first yarn type, the another yarn additionally fed is the base yarn;

[0016] in the second yarn type, the another yarn additionally fed is the fusible yarn; and

[0017] in the third yarn type, the another yarn additionally fed is composed of the base yarn and the fusible yarn.

[0018] In one embodiment, a material of the fusible yarn is selected from polypropylene (PP) or thermoplastic polyurethane (TPU).

[0019] In one embodiment, a temperature for heating and pressing one side of the intermediate product is between 110° C. and 190° C.

[0020] In one embodiment, when in step four, applying negative pressure to one of the two surface layer textures that has not been heated and pressed.

[0021] In one embodiment, in step four, locally heating and pressing one of the two surface layer textures which is heated and pressed with high frequency.

[0022] In addition to the foregoing, the present invention further provides a water-penetration-preventing double-layer fabric, comprising:

[0023] two surface layer textures, knitted with yarns selected from a group consisting of a base yarn, a fusible yarn or a combination thereof, the two surface layer textures are selected from a first implementation type and a second implementation type, wherein

[0024] in the first implementation type, each of the two surface layer textures comprising the base yarn and the fusible yarn; and

[0025] in the second implementation type, one of the two surface layer textures being formed with the base yarn, and the other of the two surface layer textures being the fusible yarn;

[0026] wherein a melting point of the base yarn is higher than a melting point of the fusible yarn, one of the two surface layer textures is heated and pressed and the fusible yarn thereof is melted to form a barrier layer which prevents water penetration; and

[0027] a cross-linked texture, cross-linking the two surface layer textures, the cross-linked texture is formed by a tuck knitting or a transfer knitting and comprising a yarn-

stacked thickness located at a space between the two surface layer textures, wherein the yarn-stacked thickness at least meets a following condition that within a heating and pressing time, an increased temperature of one of the two surface layer textures that has not heated and pressed is not higher than the melting point of the fusible yarn.

[0028] In one embodiment, the cross-linked texture is formed with the yarns used for knitting the two surface layer textures or formed with another yarn additionally fed.

[0029] In one embodiment, the another yarn additionally fed is selected from a group consisting of a first yarn type, a second yarn type and a third yarn type, wherein

[0030] in the first yarn type, the another yarn additionally fed is the base yarn;

[0031] in the second yarn type, the another yarn additionally fed is the fusible yarn; and

[0032] in the third yarn type, the another yarn additionally fed is composed of the base yarn and the fusible yarn.

[0033] In one embodiment, a material of the fusible yarn is selected from polypropylene (PP) or thermoplastic polyurethane (TPU).

[0034] Through the aforementioned disclosure of the present invention, compared with the prior art, the present invention has the following features: one of the two surface layer textures is heated and pressed to make the fusible yarn to which the surface layer texture belongs to be melted to form the barrier layer capable of blocking water penetration, and a thickness of the cross-linked texture causes an increased temperature of one of the two surface layer textures that has not been heated and pressed not higher than a melting point of the fusible yarn during the heating and pressing process, thereby making the double-layer fabric capable of maintaining a softness of the fabric while providing a waterproof effect.

BRIEF DESCRIPTION OF THE DRAWINGS

[0035] FIG. 1 is a first flow chart of a first implementation type of the present invention;

[0036] FIG. 2 is a flow chart of a second implementation type of the present invention;

[0037] FIG. 3 is a second flow chart of the first implementation type of the present invention;

[0038] FIG. 4 is a first schematic diagram of a double-layer fabric of the first implementation type of the present invention;

[0039] FIG. 5 is a first schematic diagram of tuck knitting of the present invention;

[0040] FIG. 6 is a second schematic diagram of tuck knitting of the present invention;

[0041] FIG. 7 is a first schematic diagram of a double-layer fabric of the second implementation type of the present invention;

[0042] FIG. 8 is a second schematic diagram of the double-layer fabric of the second implementation type of the present invention; and

[0043] FIG. 9 is a second schematic diagram of the double-layer fabric of the first implementation type of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0044] The detailed description and technical content of the present invention are described below with reference to the drawings.

[0045] Please refer to FIG. 1, FIG. 2, FIG. 3, FIG. 4, FIG. 5, FIG. 6, FIG. 7 and FIG. 8. The present invention provides a method 10 for manufacturing a water-penetration-preventing double-layer fabric, the method 10 comprising the following steps.

[0046] Step one 11: knitting two surface layer textures 21 with current yarns, wherein the current yarns are selected from a group consisting of a base yarn 211, a fusible yarn 212 and a combination thereof, a melting point of the base yarn 211 is higher than a melting point of the fusible yarn 212, and the two surface layer textures 21 are selected from a first implementation type and a second implementation type. In the first implementation type, each of the two surface layer textures 21 comprising the base yarn 211 and the fusible yarn 212. In the second implementation type, one of the two surface layer textures 21 being formed with the base yarn 211, and the other of the two surface layer textures 21 being formed with the fusible yarn 212.

[0047] Step two 12: forming a cross-linked texture 24 by continuously cross-linking the two surface layer textures 21 through a tuck knitting or a transfer knitting, and generating a yarn-stacked thickness 241 during knitting at a reserved space between the two surface layer textures 21 to extend a heat conduction path of the cross-linked texture 24.

[0048] Step three 13: completing an intermediate product, wherein the intermediate product is a double-layer fabric 20.

[0049] Step four 14: heating and pressing one side of the intermediate product to melt the fusible yarn 212 in one of the two surface layer textures 21 which is heated and pressed and to form a barrier layer 25 which prevents water penetration, wherein during heating and pressing the cross-linked texture 24, an increased temperature of one of the two surface layer textures 21 that has not been heated and pressed is not higher than the melting point of the fusible yarn 212 due to the yarn-stacked thickness 241.

[0050] Specifically, the knitting related steps in the method 10 of the present invention are all completed by knitting using a flat knitting machine, and are realized by a front bed (FB) and a back bed (BB) comprised by the flat knitting machine. Specific structures of the front bed and the back bed are conventional techniques in the art, and will not be described here. In addition, the present invention will describe the two surface layer textures 21 in detail hereinafter, so the first implementation type and the second implementation type of the two surface layer textures 21 will be described hereinafter.

[0051] The two surface layer textures 21 which are the first implementation type are described. In step one 11, the two surface layer textures 21 are knitted by the current yarn through the flat knitting machine. The current yarn includes a base yarn 211 and a fusible yarn 212. The base yarn 211 can actually be an ordinary cotton yarn. A melting point of the fusible yarn 212 is lower than that of the base yarn 211, and the fusible yarn 212 can be made of a thermally fusible material, so that the fusible yarn 212 is melted by heat when being heated. In one embodiment, a material of the fusible yarn 212 is selected from polypropylene (PP) or thermoplastic polyurethane (TPU). Then, in step two 12, the flat knitting machine continuously cross-links the two surface

layer textures **21** by the tuck knitting or the transfer knitting to form the cross-linked texture **24**. It is worth noting that the cross-linked texture **24** described herein actually only cross-links the two surface layer textures **21**, and does not have a function of supporting the two surface layer textures **21**, that is, the cross-linked texture **24** is different from the support yarn texture described by those with ordinary skill in the art. Furthermore, the cross-linked texture **24** depicted in FIG. 4 herein is only for illustration, and the cross-linked texture **24** can actually be formed by stacking and interlacing multiple yarns, thereby enabling the two surface layer textures **21** to be tightly cross-linked. In addition, since the tuck knitting and the transfer knitting of the flat knitting machine can be programmed differently according to an operator's programming of the front bed and the back bed, knitting steps of the tuck knitting and the transfer knitting are different, so it will be described by making examples in the latter part of the specification, and will not be described in detail here. Further, in a process of cross-linking the two surface layer textures **21**, the flat knitting machine makes a reserved space between the two surface layer textures **21** generate the yarn-stacked thickness **241** to enable the cross-linked texture **24** capable of extending a path of heat conduction. Afterwards, proceeding to step three **13**, the flat knitting machine completes knitting and produces the intermediate product, the intermediate product is a semi-finished product of the present invention, that is, the double-layer fabric **20** that has not been heated and pressed. Proceeding to step four **14**, using a heating and pressing equipment capable of providing a heat source to heat and press one side of the double-layer fabric **20**, wherein the heating and pressing equipment can heat and press one side of the double-layer fabric **20** at the same time, or heating and pressing are performed separately on the double-layer fabric **20**, and a heating temperature can be set in a range between 110° C. and 190° C. After one side of the double-layer fabric **20** is heated and pressed, the fusible yarn **212** to which the surface layer structure **21** belongs is melted by heat to form the barrier layer **25**, and the barrier layer **25** is capable of preventing water from penetrating from one of the surface layer textures **21** to the other of the surface layer textures **21**. At the same time, the surface layer texture **21** after being heated and pressed further transfers heat energy toward the cross-linked texture **24**, so that a part of the cross-linked texture **24** adjacent to one of the surface layer textures **21** being heated and pressed is also melted by heat. One of the two surface layer textures **21** that is not heated and pressed, due to the yarn-stacked thickness **241** providing a sufficient length of heat conduction path, has a raised temperature which is not higher than a melting point of the fusible yarn **212**, thus it is not melted by heat, and a softness of the fabric is maintained.

[0052] Furthermore, please refer to FIG. 2, FIG. 7 and FIG. 8, the two surface layer textures **21** which are the second implementation type are described. In the following, in order to facilitate readers to distinguish the second implementation type from the first implementation type, the following implementation methods and steps are marked with different component numbers. In step one **51**, the flat knitting machine knits the two surface layer textures **21** with the base yarn **211** and the fusible yarn **212** respectively. That is, after knitting of the two surface layer textures **21** is completed, one of the two surface layer textures **21** is the base yarn **211** (as indicated by reference number **214**), and the other of the two surface layer textures **21** is the fusible

yarn **212** (as indicated by reference number **215**). Wherein, the base yarn **211** can actually be an ordinary cotton yarn, a melting point of the fusible yarn **212** is lower than that of the base yarn **211**, and the fusible yarn **212** can be made of a thermally fusible material, so that the fusible yarn **212** is melted by heat when being heated. In one embodiment, a material of the fusible yarn **212** is selected from polypropylene (PP) or thermoplastic polyurethane (TPU). Then in step two **52**, the flat knitting machine cross-links the two surface layer textures **21**, and continuously cross-links the two surface layer textures **21** by the tuck knitting and the transfer knitting to form the cross-linked texture **24**. Further, in a process of cross-linking the two surface layer textures **21**, the flat knitting machine makes a reserved space between the two surface layer textures **21** generate the yarn-stacked thickness **241** to enable the cross-linked texture **24** capable of extending a path of heat conduction.

[0053] Then, proceeding to step three **53**, the flat knitting machine completes knitting and producing the intermediate product, the intermediate product is a semi-finished product of the present invention, that is, the double-layer fabric **20** that has not been heated and pressed. Proceeding to step four **54**, using the heating and pressing equipment capable of providing a heat source to heat and press the one formed by the fusible yarn **212** of the two surface layer texture **21** (as indicated by reference number **215**), wherein the heating and pressing equipment can heat and press the one formed by the fusible yarn **212** of the two surface layer texture **21** (as indicated by reference number **215**) at the same time, or heat and press the one formed by the fusible yarn **212** of the two surface layer texture **21** (as indicated by reference number **215**) separately. In one embodiment, a heating temperature applied by the heating and pressing equipment is in a range between 110° C. and 190° C. After the double-layer fabric **20** is heated and pressed, the one formed by the fusible yarn **212** of the two surface layer texture **21** (as indicated by reference number **215**) is melted by heat to form the barrier layer **25**, and the barrier layer **25** is capable of preventing water from penetrating from one of the surface layer textures **21** to the other surface layer texture **21**. At the same time, the one formed by the fusible yarn **212** of the two surface layer texture **21** (as indicated by reference number **215**) further transfers heat energy toward the cross-linked texture **24**, so that a part of the cross-linked texture **24** adjacent to the one formed by the fusible yarn **212** of the two surface layer texture **21** (as indicated by reference number **215**) is also melted by heat, and the one formed by the base yarn **211** of the two surface layer texture **21** (as indicated by reference number **214**), due to the yarn-stacked thickness **241** providing a sufficient length of heat conduction path, has a raised temperature which is not higher than a melting point of the fusible yarn **212**, thus it is not melted by heat, and a softness of the fabric is maintained.

[0054] The present invention does not make the double-layer fabric **20** to achieve waterproof effect by using the conventional mechanism, but makes one of the two surface layer textures **21** of the double-layer fabric **20** to be melted by heat to produce the barrier layer **25**, and at the same time, the cross-linked texture **24** is allowed to block the heat energy of one of the two surface layer textures **21** being hot-pressed from being transferred to the other one of the two surface layer textures **21**, thereby directly forming the barrier layer **25** on the double-layer fabric **20** to achieve an

object of preventing water penetration, and another side of the double-layer fabric **20** is not heated so as to maintain a softness of the fabric.

[0055] In one embodiment, FIG. **5** and FIG. **6** are used as examples to illustrate the programming of the tuck knitting. Using FIG. **5** for description, after a yarn feeding mechanism of the flat knitting machine feeds the yarn on the front bed, the flat knitting machine performs tuck knitting on the front bed at positions apart from each other by one stitch, so that a portion of the yarn located on the front bed can be tucked on the back bed. Using FIG. **6** for description, after the flat knitting machine knits the two surface layer textures **21**, and the yarn feeding mechanism feeds the yarn, the flat knitting machine makes the yarn on the front bed tuck on the back bed at a position separated by several stitches, and then tuck the yarn located on the bed on the front bed at positions separated by several stitches. Wherein, in the present invention, the tuck knittings depicted in FIG. **5** and FIG. **6** are merely examples, and are not intended to limit the programming of the tuck knitting.

[0056] Furthermore, as shown in FIG. **3**, FIG. **7**, FIG. **8** and FIG. **9**, in step two **12**, the cross-linked texture **24** is formed with the yarn used for knitting the two surface layer textures **21** or formed with an another yarn **240** additionally fed. Specifically, as shown in FIG. **4**, when the flat knitting machine knits the two surface layer textures **21**, the cross-linked texture **24** can be knitted with the base yarn **211** and the fusible yarn **212** contained in each of the two surface layer textures **21**. Alternatively, as shown in FIG. **7** and FIG. **8**, the cross-linked texture **24** can be knitted with the base yarn **211** or the fusible yarn **212** when the flat knitting machine knits the two surface layer textures **21**. In addition, as shown in FIG. **9**, the cross-linked texture **24** can also be knitted by the flat knitting machine by means of additional yarn feeding, and the another yarn **240** used by the flat knitting machine for additional yarn feeding can be formed with the base yarn **211**, or the fusible yarn **212**, or a mixture of the base yarn **211** and the fusible yarn **212**.

[0057] On the other hand, as shown in FIG. **3** and FIG. **4**, in one embodiment, step four **14** further includes a sub-step **141** of applying negative pressure on the one that is not heated or pressed of the two surface layer texture **21**. Specifically, after the double-layer fabric **20** forms the cross-linked texture **24**, when the heating and pressing equipment heats and presses one of the two surface layer textures **21**, the hot-pressing equipment can provide negative pressure on the other one of the two surface layer textures **21** simultaneously to form a temperature difference between the two surface layer textures **21**, thereby inhibiting the transfer of heat energy through the cross-linked texture **24** to one of the surface layer textures **21** that has not been heated and pressed, and avoiding the one that has not been heated and pressed of the two surface layer textures **21** to be melted by heat, and at the same time, hot-melting of the cross-linked texture **24** can be reduced. In addition, in another embodiment, when the present invention heats and presses one of the two surface layer textures **21** in step four **14**, the heating and pressing equipment can provide high-frequency heat treatment with induced current to locally heat and press one of the two surface layer textures **21** which is heated and pressed. Through the high-frequency heat treatment in this embodiment, only a partial structure of the two surface layer textures **21** is heated and pressed, and a

condition in which the two surface layer textures **21** being hot-pressed can be controlled more specifically.

[0058] It is worth noting that, in the foregoing content and figures, only the method **10** is used to illustrate the specific implementation modes of the present invention, and the specific implementation modes of a method **50** are the same as those of the method **10**, so the modes will not be described again in the figures and specification.

[0059] On the other hand, as shown in FIG. **4**, FIG. **7**, FIG. **8** and FIG. **9**, the present invention also provides the double-layer fabric **20** for preventing water penetration, and the double-layer fabric **20** can be manufactured by the method **10** or the method **50**, respectively. First, the double-layer fabric **20** made by the method **10** will be described. The double-layer fabric **20** includes the two surface layer textures **21** and the cross-linked texture **24**. Specifically, each of the two surface layer textures **21** includes a plurality of yarn loops **213**, each of the yarn loops **213** is formed with the base yarn **211** and the fusible yarn **212**, one of the two surface layer textures **21** is heated and pressed, so that the fusible yarn **212** of the one being heated and pressed of the two surface layer textures **21** forms the barrier layer **25** capable of preventing water penetration. On the other hand, the cross-linked texture **24** cross-links the two surface layer textures **21**, the cross-linked texture **24** is formed by the tuck knitting or the transfer knitting at a space between the two surface layer textures **21**, and therefore, the cross-linked texture **24** is provided with the yarn-stacked thickness **241**. When one side of the double-layer fabric **20** is heated and pressed, the yarn-stacked thickness **241** causes an increased temperature of the one not being heated and pressed of the two surface layer textures **21** not higher than the melting point of the fusible yarn **212**, so that the double-layer fabric **20** forms the barrier layer **25** only on one of the two surface layer textures **21**, and the other of the two surface layer textures **21** is not melted by heat, thereby maintaining a feature of softness of the double-layer fabric **20**.

[0060] Moreover, when the double-layer fabric **20** is knitted by the method **50**, the double-layer fabric **20** also includes the two surface layer textures **21** and the cross-linked texture **24**. The two surface layer textures **21** are respectively formed with the base yarn **211** and the fusible yarn **212**, wherein a melting point of the base yarn **211** is higher than a melting point of the fusible yarn **212**, and the surface layer texture **21** formed with the fusible yarn **212** (as indicated by reference number **215**) is heated and pressed to cause the fusible yarn **212** form the barrier layer **25** capable of preventing water penetration. On the other hand, the cross-linked texture **24** cross-links the two surface layer textures **21**, and the cross-linked texture **24** is formed by the tuck knitting or the transfer knitting at a space between the two surface layer textures **21**, and therefore, the cross-linked texture **24** is provided with the yarn-stacked thickness **241**. When the one formed with the fusible yarn **212** of the two surface layer texture **21** (as indicated by reference number **215**) is heated and pressed, the yarn-stacked thickness **241** causes an increased temperature of the one formed with the base yarn **211** of the two surface layer texture **21** (as indicated by reference number **214**) after a heating and pressing time not higher than the melting point of the fusible yarn **212**, so that the double-layer fabric **20** forms the barrier layer **25** only on one of the two surface layer textures **21**, and the other of the two surface layer textures **21** is not melted by heat, thereby maintaining a feature of softness of the

double-layer fabric **20**. The double-layer fabric **20** of the present invention does not achieve waterproof effect by using the conventional mechanism, and is capable of providing a comfortable feeling for wearers.

[0061] In one embodiment, the cross-linked texture **24** can be formed with the yarn used for knitting the two surface layer textures **21** or formed with the another yarn **240** additionally fed. Further, when the cross-linked texture **24** is knitted with the yarn used in the two surface layer textures **21**, it means that the cross-linked texture **24** can be knitted with the yarn formed by mixing the base yarn **211** with the fusible yarn **212**, the cross-linked texture **24** can also be knitted with the fusible yarn **212** of the one formed with the fusible yarn **212** of the two surface layer textures **21** (as indicated by reference number **215**), or knitted with the base yarn **211** of the one formed with the base yarn **211** of the two surface layer texture **21** (as indicated by reference number **214**). In addition, when the cross-linked texture **24** is formed with the another yarn **240** additionally fed, the another yarn **240** used in the cross-linked texture **24** can be formed with the base yarn **211**, or the fusible yarn **212**, or be composed of the base yarn **211** and the fusible yarn **212**.

What is claimed is:

1. A method for manufacturing a water-penetration-preventing double-layer fabric, comprising steps of:

step one: knitting two surface layer textures with current yarns, wherein the current yarns are selected from a group consisting of a base yarn, a fusible yarn, and a combination thereof, a melting point of the base yarn is higher than a melting point of the fusible yarn, and the two surface layer textures are selected from a first implementation type and a second implementation type, wherein

in the first implementation type, each of the two surface layer textures comprises the base yarn and the fusible yarn; and

in the second implementation type, one of the two surface layer textures is formed with the base yarn, and the other one of the two surface layer textures is formed with the fusible yarn;

step two: forming a cross-linked texture by continuously cross-linking the two surface layer textures through a tuck knitting or a transfer knitting, and generating a yarn-stacked thickness during knitting at a reserved space between the two surface layer textures to extend a heat conduction path of the cross-linked texture;

step three: completing an intermediate product, wherein the intermediate product is a double-layer fabric; and

step four: heating and pressing one side of the intermediate product to melt the fusible yarn in one of the two surface layer textures which is heated and pressed and to form a barrier layer which prevents water penetration, wherein during heating and pressing the cross-linked texture, an increased temperature of one of the two surface layer textures that has not been heated and pressed is not higher than the melting point of the fusible yarn due to the yarn-stacked thickness of the cross-linked texture.

2. The method for manufacturing the water-penetration-preventing double-layer fabric as claimed in claim **1**, wherein in step two, the cross-linked texture is formed with the current yarns used for knitting the two surface layer textures or formed with an another yarn additionally fed.

3. The method for manufacturing the water-penetration-preventing double-layer fabric as claimed in claim **2**, wherein the another yarn additionally fed is selected from a group consisting of a first yarn type, a second yarn type and a third yarn type, wherein

in the first yarn type, the another yarn additionally fed is the base yarn;

in the second yarn type, the another yarn additionally fed is the fusible yarn; and

in the third yarn type, the another yarn additionally fed is composed of the base yarn and the fusible yarn.

4. The method for manufacturing the water-penetration-preventing double-layer fabric as claimed in claim **1**, wherein a material of the fusible yarn is selected from polypropylene (PP) or thermoplastic polyurethane (TPU).

5. The method for manufacturing the water-penetration-preventing double-layer fabric as claimed in claim **1**, wherein a temperature for heating and pressing one side of the intermediate product is between 110° C. and 190° C.

6. The method for manufacturing the water-penetration-preventing double-layer fabric as claimed in claim **5**, wherein in step four, applying negative pressure to one of the two surface layer textures that has not been heated and pressed.

7. The method for manufacturing the water-penetration-preventing double-layer fabric as claimed in claim **6**, wherein in step four, locally heating and pressing one of the two surface layer textures which is heated and pressed with high frequency.

8. The method for manufacturing the water-penetration-preventing double-layer fabric as claimed in claim **1**, wherein in step four, is applying negative pressure to one of the two surface layer textures that has not been heated and pressed.

9. The method for manufacturing the water-penetration-preventing double-layer fabric as claimed in claim **8**, wherein in step four, locally heating and pressing one of the two surface layer textures which is heated and pressed with high frequency.

10. The method for manufacturing the water-penetration-preventing double-layer fabric as claimed in claim **1**, wherein in step four, locally heating and pressing one of the two surface layer textures which is heated and pressed with high frequency.

11. A water-penetration-preventing double-layer fabric, comprising:

two surface layer textures, knitted with yarns selected from a group consisting of a base yarn, a fusible yarn or a combination thereof, the two surface layer textures are selected from a first implementation type and a second implementation type, wherein

in the first implementation type, each of the two surface layer textures comprising the base yarn and the fusible yarn; and

in the second implementation type, one of the two surface layer textures being formed with the base yarn, and the other of the two surface layer textures being the fusible yarn;

wherein a melting point of the base yarn is higher than a melting point of the fusible yarn, one of the two surface layer textures is heated and pressed and the fusible yarn thereof is melted to form a barrier layer which prevents water penetration; and

a cross-linked texture, cross-linking the two surface layer textures, the cross-linked texture is formed by a tuck knitting or a transfer knitting and comprising a yarn-stacked thickness located at a space between the two surface layer textures, wherein the yarn-stacked thickness at least meets a following condition that within a heating and pressing time, an increased temperature of one of the two surface layer textures that has not heated and pressed is not higher than the melting point of the fusible yarn.

12. The water-penetration-preventing double-layer fabric as claimed in claim **11**, wherein the cross-linked texture is formed with the yarns used for knitting the two surface layer textures or formed with an another yarn additionally fed.

13. The water-penetration-preventing double-layer fabric as claimed in claim **12**, wherein the another yarn additionally fed is selected from a group consisting a first yarn type, a second yarn type and a third yarn type, wherein

in the first yarn type, the another yarn additionally fed is the base yarn;

in the second yarn type, the another yarn additionally fed is the fusible yarn; and

in the third yarn type, the another yarn additionally fed is composed of the base yarn and the fusible yarn.

14. The water-penetration-preventing double-layer fabric as claimed in claim **11**, wherein a material of the fusible yarn is selected from polypropylene (PP) or thermoplastic polyurethane (TPU).

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