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(54) **MANUFACTURING METHOD FOR A NATURAL FIBER-CONTAINING SUTURE-FREE SHIRT**

HERSTELLUNGSVERFAHREN EINES NATÜRLICHES, FASERVERSTÄRKTES UND NAHTFREIES
HEMD

PROCÉDÉ DE FABRICATION D'UNE CHEMISE SANS SUTURE CONTENANT DES FIBRES
NATURELLES

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(73) Proprietor: **Luthai Textile Co., Ltd.**
Shandong 255086 (CN)

(72) Inventors:
• **LIU, Zibin**
Shandong 255086 (CN)
• **QIN, Da**
Shandong 255086 (CN)

• **SONG, Haiyan**
Shandong 255086 (CN)

(74) Representative: **Lang, Christian**
LangPatent Anwaltskanzlei
Ingolstädter Straße 5
80807 München (DE)

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Description

Technical field

[0001] The present invention belongs to the shirt field and relates to a manufacturing method for a natural fiber containing, suture-free shirt.

Technical background

[0002] Conventionally, a shirt is made by using sewing thread, but this kind of shirt has some defects in the production and use process that are specified as follows:

First, in the process of sewing, machine needles inevitably leave holes in the sewing stitches places and easily break yarn fabrics, so resulting in that the shirt joint strength is decreased,

Secondly, the sewing thread has extensibility, so in debugging process a stitch is caused that is not beautiful,

Thirdly, the sewing thread color and fabric color are easily provided in deviating colors,

Fourthly, shirt seams with sewing thread are easily wrinkled, especially when using natural fiber fabrics with non-iron finishing, the juncture places with sewing thread are more serious,

Fifthly, most shirts with sewing thread stitches have a face side and a reverse side, wherein the reverse side stitches and sewing allowance are not beautiful, so that the shirt can only be worn in face side and cannot be used as reversible shirt wearable on both sides.

[0003] In order to reduce seam wrinkles after sewing shirts, some tapes are joined in the seams of non-iron finished shirts, but the bonding strength of the tape is so low, that it cannot meet the strong strength of the shirt. Therefore it still needs the use of sewing thread connecting pieces. Some chemical fiber fabrics of clothing adopt the melt adhesive fabric technology to stick relative garment pieces together, wherein the fabric has a single color, simple structure, concise style, but the fabric is not breathable, so that wearing is uncomfortable, and especially adhesive strength of the garment connection is low and therefore cannot meet the required joint strength. Currently there appeared some seamless knitting garment without sewing thread, wherein the knitting fabric is woven into a garment directly and belongs to fabric weaving technology, wherein such technologies are generally used for the production of underwear, but not suitable for shirt production.

[0004] Document US 2012/185994 A1 discloses a no-stitch shirt which is anti-wrinkle and no-ironing and its production method.

Summary of the invention

[0005] According to the above deficiency of existing technology, the present invention aims to solve the technical problem by providing a production method for a suture-free shirt wherein the different parts can be stuck together by means of a polyurethane hot melt adhesive, and its strongpoint is high joint strength, good anti-wrinkling, wherein the whole shirt uses natural fiber without using sewing thread.

[0006] The present invention is a manufacturing method for a natural fiber-containing suture-free shirt as disclosed in claim 1.

[0007] The content of natural fiber in the fabric is 65% ~ 100%, wherein the natural fiber is made of cotton, linen, wool, silk or others. Because the fabric is a natural fiber, the suture-free shirt is comfortable in wearing, breathable healthy and environmentally protective.

[0008] The production method of a suture-free shirt from natural fiber includes the following steps:

(1) Cutting process: cutting natural fiber fabrics into garment pieces, wherein the garment pieces comprise a collar piece, front piece, back piece, shoulder piece, sleeve piece, cuff piece, hem piece, placket piece and breast pocket piece, wherein all or part of the pieces are cut using conjoined cutting,

(2) connection bonding process: adjacent pieces are joint by adhesion, wherein a half cover-seam, parallel or stuck outside connection is used, wherein all of the various joints of garment pieces are performed by the hot melt adhesive technology, wherein polyurethane adhesive materials are used to connect all the pieces into a whole,

(3) The three-dimensional ironing process: select the arc-match stereo ironing machine to iron and mold all of the joints,

(4) Cooling process: by using a gas suction device, the products are quickly cooled down to room temperature, wherein for producing a suture-less shirt with a cotton fabrics content of 100%, the width of the polyurethane adhesive materials in step (2) is respectively chosen from 2 mm, 4 mm to 6 mm, having a thickness of 0.02 mm and 0.04 mm,

and wherein for producing a suture-less shirt from linen fabrics the width of polyurethane adhesive materials in step (2) is respectively chosen as 8 mm and 10 mm and the thickness is 0.04 mm,

and wherein for producing a suture-less shirt with a cotton fabrics content of 65% the width of polyurethane adhesive materials in step (2) is respectively chosen from 6 mm and 8 mm, having a thickness of 0.03 mm and 0.05 mm.

[0009] When cutting the pieces, there is a need to adopt polyurethane adhesive materials to stick on fringes of the shirt pieces. Also all shirt fringes or part fringes need to be folded into smooth cloth fringes, and then the

shirt fringes or smooth cloth fringes are bonded by polyurethane adhesive materials. Specific operation modes need to be carried out according to different clothing: When producing the normal shirts, the polyurethane adhesive materials need to stick on fringes of shirt pieces and then two pieces of fringes are folded, wherein the piece of adhesive seam allowance is folded into a smooth cloth fringe, and then the smooth cloth fringe is bonded by the polyurethane adhesive materials.

[0010] When producing casual shirts, the polyurethane adhesive materials need to be stuck on fringes of shirt pieces and then only one piece of fringe is folded, so that forming into a casual shirt with fringes, and also the fringes of shirt pieces are directly connected, so that the casual shirts are formed.

[0011] In the step (1) the pieces of fabric can be cut directly, or as alternative, before cutting the pieces of fabric can be resin finished.

[0012] In all of the stereo pressing processes, the press parameters are set as following: temperature 150 ~ 180 °C, pressure 2 ~ 8 kg/cm², time 4 ~ 15 seconds. The use of the above parameters can make the bonding performance of polyurethane adhesive materials conform to the requirements of the bonding strength of suture-less shirts and can prevent the shirt fabrics from being damaged.

[0013] The polyurethane adhesive materials can be a solid polyurethane adhesive material, having the shape of membrane, star, strip, mesh, dot, mesh, broken-thread, etc., or can also be liquid polyurethane adhesive materials. Models of polyurethane adhesive materials are 3410, 3206 d, 3410 c, 3412, 3415, 3412, 3106, 3302, 3914, 3916 or 3918, which are produced in Hong Kong BEMIS company. Polyurethane adhesive materials are colorless, transparent, have high strength and are environmentally friendly, on the one hand, and can be used for all the colors of the natural fiber fabrics, because there will not be any color difference phenomenon, On the other hand, the adhesive strength is above 200N per inch, so that the adhesion strength of the suture-free shirt is higher than that of the normal shirt with sewing threads.

[0014] For many years, shirts are made by sewing threads. However, the present invention provides a changed production method for shirts, replacing a sewing thread and sewing machine. The end of the history of the shirt using a sewing thread, makes clothing production become simple, saves a lot of resources and artificial, wherein a suture-free shirt is obtained by this method, wherein the seam has smoothness and good appearance, stereoscope shape, is beautiful, comfortable, wherein seam wrinkling of conventional shirts with sewing threads for sewing together by existing technology, needle holes, slippage, color differences etc. are avoided. Fabrics mainly use natural fibers that provide simple craft, environmental friendly materials, cost savings, and achieve the goal of being comfortable and fashionable.

[0015] Compared with the existing technology, the beneficial effects of the invention are:

1. The suture-free shirt replaces a sewing thread and sewing machine, wherein the manufacturing method of a shirt is changed by using polyurethane adhesive materials to connect shirt pieces without a sewing thread. On the one hand, they provide simple craft, save a lot of resources and artificial, and on the other hand, the seam is smoothness and has a good appearance, stereoscope shape and is comfortable.

2. There is no difference between the face side and inverse side for the suture-free shirt and the seam stitches are even, so that the shirt can be worn in double face, achieving multi-purpose and improves the added value of the shirt.

3. The polyurethane adhesive materials are used in joint seams which are characterized in having high strength, being environmentally protective, colorless and transparent, so that seam adhesion strength of suture-less shirts is higher than that of the normal shirt with sewing threads, and the suture-less therefore is durable. There will not be any color difference phenomenon and the polyurethane adhesive materials can be used in any fabric.

4. The hot melt point of polyurethane adhesive materials is 150°C~180°C, belongs to high temperature adhesion and adapts to high temperature washing and ironing, providing smooth seams without wrinkles.

5. Fabrics mainly comprise natural fiber fabrics, so that shirt wearing is comfortable, provides permeability and is healthy and the shirt is environmentally protective.

Appended drawings

[0016]

Figure 1 is a schematic structure diagram of a suture-free shirt without sewing thread according to the present invention,

Figure 2 is a structure diagram of a shirt according to the prior art,

Figure 3 is a schematic structure diagram of a shirt seam by a half-cover seam method,

Figure 4 is a structure diagram of pieces joint adhesion by parallel method,

Figure 5 is a structure diagram of a shirt seam pasting from outside adhesive.

Detailed description of the embodiments

[0017] Combined with the appended drawings an exemplary embodiment is given below for further description of the invention:

As shown in figure 1, the suture-free shirt comprises a collar 1, front 2, back 3, shoulder 4, sleeve 5, cuff 6, hem 7, placket 8, breast pocket 9 and bottom 10, wherein all the pieces are joint, wherein the joint or sewing in all connections is done by hot melt adhesive technology to form a shirt, wherein the pieces of the fabric are formed with natural fibers.

[0018] A positive breast pocket is set on the front piece, as well as a corresponding positive inner breast pocket, to make the suture-less shirt convenient and practical when allowing double-face wearing. In the fabrics the described content of natural fiber is 65% ~ 65%, including natural fibers of cotton, linen, wool, silk, wherein one or several individual pieces or a single piece can include the same kind of natural fiber but also different fibers. Due to the use of natural fiber fabrics, the suture-free shirt is comfortable in wearing, provides good permeability and is healthy and environmentally protective.

[0019] Figure 1 shows that the suture-less shirt has no traces of sewing thread stitching. Figure 2 shows the structure diagram of a traditional shirt using sewing threads, wherein the dotted lines represent sewing thread stitches. The figure shows that the seams of the shirt, pasting seam or cover-seam, all use sewing thread sewing, so having sewing stitches of the sewing thread on the double-face. Comparison of figures 1 and 2 reveals that, when the present invention is compared with the traditional shirt adopting sewing thread, the strong-point of the suture-less shirt is characterized in smoothness, beauty, strong stereo sense. Moreover, the suture-less shirt, wherein both the positive and negative seams are uniform and beautiful, can be worn on both sides, realizing the effect of multi-purpose and thus can improve the added value of the shirt.

[0020] The manufacturing method of the suture-less shirt with natural fiber includes the following steps:

(1) cutting process: cutting the natural fiber fabrics into shirt pieces, including a collar piece 1, front piece 2, back piece 3, shoulder piece 4, sleeve piece 5, cuff piece 6, hem piece 7, placket piece 8 and chest pocket piece 9, wherein all or part of the pieces are cut using a conjoined cutting mode,

(2) connection bonding process: adjacent pieces can be stuck together by half-cover seam mode (as shown in figure 3), parallel mode (as shown in figure 4) or pasting from outside (as shown in figure 5), and all shirt pieces are bonded by the hot melt adhesive technology, wherein polyurethane adhesive materials are used for connecting all the pieces into a shirt,

(3) stereo press ironing process: using arc-match

stereo pressing to iron and mold all of the joints, the fitting joints and cover seams,

(4) cooling and molding processes: using a gas suction device, so that when cooled down to room temperature, a finished suture-less shirt is obtained.

[0021] After cutting of the pieces, polyurethane adhesive materials are applied to stick on fringes of the shirt pieces. Then all shirt fringes or part of the fringes are folded into smooth cloth fringes, and then the shirt fringes or smooth cloth fringes are connected by polyurethane adhesive materials. Specific operation modes need to be carried out according to different clothing:

When producing normal shirts, the polyurethane adhesive materials are used to stick on fringes of shirt pieces and then two pieces of fringes are folded, wherein the piece of adhesive seam allowance is folded into a smooth cloth fringe, wherein the smooth cloth fringe is bonded by polyurethane adhesive materials,

When Producing casual shirts, the polyurethane adhesive materials are adopted to stick on fringes of shirt pieces and then only one piece of fringe is folded, forming into a casual shirt with fringes, also directly connect fringes of shirt pieces, so that the casual shirts are formed.

[0022] In the step (1), as alternatives, the pieces of fabric can be either cut directly or can be resin finished before cutting.

[0023] For all of the stereo pressing processes, the press parameters are set as following: temperature 150 ~ 180 °C, pressure of 2 ~ 8 kg/cm², time 4 ~ 15 seconds. By using the above parameters the bonding performance of polyurethane adhesive materials can be made conform to the requirements of the bonding strength of suture-less shirts and can prevent the shirt fabrics from being damaged.

[0024] The polyurethane adhesive materials can be a solid polyurethane adhesive material comprising the shape of membrane, star, strip, mesh, dot, mesh, broken-thread, etc., but can also be liquid polyurethane adhesive materials. Models of polyurethane adhesive materials are 3410, 3206 d, 3410 c, 3412, 3415, 3412, 3106, 3302, 3914, 3916 or 3918, which are produced in Hong Kong BEMIS company. Polyurethane adhesive materials are colorless, transparent, have high strength and are environmentally protective, on the one hand, and can be used for all the colors of natural fiber fabrics because there will not be any color difference phenomenon, On the other hand, the adhesive strength is above 200N per inch, so that the adhesion strength of the suture-less shirts is higher than that of a normal shirt with sewing threads.

[0025] In combination with the examples below, specific methods of suture-free shirt production are de-

scribed:

Embodiment 1 (double-face wearing suture-free shirt from cotton fabric):

[0026] Use 100% cotton non-iron fabrics and cut pieces, use polyurethane adhesive materials, wherein according to different parts the width of polyurethane adhesive materials is respectively chosen from 2 mm, 4 mm to 6 mm, having a thickness of 0.02 mm and 0.04 mm, set a face breast pocket on the front piece of the garment, and similarly also set an inner pocket, stick on fringes of shirt pieces and then fold two pieces of fringes, wherein the piece of adhesive seam allowance is fold into a smooth cloth fringe, and then connect smooth cloth fringe by polyurethane adhesive materials, use arc-match stereo pressing to iron and mold all of the joints, wherein the press parameters are: temperature 165 °C, pressure 3 kg, for 8 seconds, and then cooling and molding, so that finally a double-side wearable suture-less shirt from 100% cotton fabrics is obtained.

[0027] In accordance with the provisions of the national sampling standard (GB - T2660-2008) to sample the suture-less shirt involves the following aspects: fiber content of fabrics and accessories, content of free formaldehyde, PH value, color fastness and washing fastness, (resistance to dry cleaning and washing), odor and biodegradable aromatic amine dyes, etc., and further involving the permissible range of clothing fabric defects of various parts, limit deviation of specification test, limit difference between symmetrical lines, stripes and checks, etc., wherein all of the above aspects must be tested rigorously, and only the qualified products are issued certificates and packed for leaving factory.

[0028] Afterwards, the non-iron performance of the suture-less with cotton fabrics has been tested in accordance with the test methods, wherein the woven fabric seam burst strength was tested, wherein the seam strength is up to 245 n. Performing AATCC143-2001 washing and drying conditions and set 20 times of washing, the seam smoothness is extremely well and up to 4.5 grade (achieve optimal grade standards), Melting adhesive materials inside the seam allowance and outer fabrics are still their selves, avoiding the color difference between the sewing thread and the fabric, so as to enhance the seam color effect. The other performances of the suture-less shirt provided by the present invention are all equal or larger than the qualified product.

Embodiment 2 (double-face wearable suture-free shirt from linen fabric):

[0029] Use linen fabric and cut pieces, use polyurethane adhesive materials, wherein according to different parts the width of polyurethane adhesive materials was respectively chosen as 8 mm and 10 mm and the thickness was 0.04 mm, set a face breast pocket on the front piece of the garment and also set an inner pocket,

stick on fringes of shirt pieces and then connect the fringes by the polyurethane adhesive materials, use arc-match stereo pressing to iron and mold all of the joints, wherein the press parameters are: temperature 155 °C, pressure 2.5 kg, for 10 seconds, and then cooling and molding, so that finally a double-side wearable in casual occasion suture-less shirt from linen fabrics is obtained.

[0030] After testing the non-iron performance of no-stitch shirt with cotton fabrics, the seam strength is up to 245 n, and the rest performance is the same as in the embodiment 1.

Embodiment 3 (single-face wearable suture-free shirt with 65% cotton fabric):

[0031] Use 65% cotton fabrics and cut pieces, using polyurethane adhesive materials, wherein according to different parts the width of polyurethane adhesive materials is respectively chosen from 6 mm and 8 mm, having a thickness of 0.03 mm and 0.05 mm, set a face breast pocket on the front piece of a garment, stick on fringes of shirt pieces and then fold two pieces of fringes, wherein the piece of adhesive seam allowance is folded into smooth cloth fringe, and then the smooth cloth fringe is connected by polyurethane adhesive materials, using arc-match stereo pressing to iron and mold all of the joints, wherein the press parameters are: temperature 168 °C, pressure 3.5kg, 8 seconds, and then cooling and molding, so that finally a single-side wearable suture-less shirt with 65% cotton fabrics is obtained .

[0032] The rest performance is the same as in the embodiment 1.

[0033] The manufacturing method of a suture-less shirt replaces sewing threads and sewing machine, wherein polyurethane adhesive materials are used to connect shirt pieces without a sewing thread, so that the production process is simple and saves a lot of resources and artificial. Polyurethane adhesive materials jointing seams of pieces having a melting point between 150 °C ~ 180 °C belong to the high temperature glue. Therefore, the suture-less shirt is more suitable for high temperature washing and high temperature ironing, wherein the seam is smooth, in order to truly achieve better effects of washing and wearing and non-wrinkling.

Reference signs:

[0034]

- | | |
|---|---------------|
| 1 | collar |
| 2 | front piece |
| 3 | back piece |
| 4 | shoulder |
| 5 | sleeve |
| 6 | cuff |
| 7 | hem |
| 8 | placket |
| 9 | breast pocket |

10 button

Claims

1. Manufacturing method for a natural fiber-containing suture-free shirt with a cotton fabrics content of 100%, or from linen fabrics, or with a cotton fabrics content of 65%, comprising a collar piece (1), a front piece (2), a back piece (3), a shoulder piece (4), a sleeve piece (5), a cuff piece (6) and a hem piece (7), a placket piece (8) and a pocket piece (9), wherein said manufacturing method includes the following steps:

(1) Cutting process: cutting natural fiber fabrics into garment pieces, wherein the garment pieces comprise the collar piece (1), the front piece (2), the back piece (3), the shoulder piece (4), the sleeve piece (5), the cuff piece (6), the hem piece (7), the placket piece (8) and the breast pocket piece (9), wherein all or part of the pieces are cut using conjoined cutting,

(2) Connection bonding process: joint adhesion of adjacent pieces, wherein half cover-seam, parallel or stuck outside are used to connect, wherein various or all of the joints of garment pieces are performed by using a hot melt adhesive technology, wherein polyurethane adhesive materials are used to connect all the pieces into a whole,

(3) Three-dimensional ironing process: select an arc-match stereo ironing machine to iron and mold all of the joints, and

(4) Cooling process: using a gas suction device for quickly cooling down the joints to room temperature,

characterized in that for producing a suture-less shirt with a cotton fabrics content of 100%, the width of the polyurethane adhesive materials in step (2) is respectively chosen from 2 mm, 4 mm to 6 mm, having a thickness of 0.02 mm and 0.04 mm, and **in that** for producing a suture-less shirt from linen fabrics the width of polyurethane adhesive materials in step (2) is respectively chosen as 8 mm and 10 mm and the thickness is 0.04 mm, and **in that** for producing a suture-less shirt with a cotton fabrics content of 65% the width of polyurethane adhesive materials in step (2) is respectively chosen from 6 mm and 8 mm, having a thickness of 0.03 mm and 0.05 mm.

2. Manufacturing method according to claim 1, **characterized in that**, when cutting pieces, polyurethane adhesive materials are adopted to stick on fringes of a shirt piece.
3. Manufacturing method according to claim 1, **char-**

acterized in that after cutting pieces, also all shirt fringes or part fringes are folded into smooth cloth fringes, and then the shirt fringes or smooth cloth fringes are stuck by polyurethane adhesive materials.

4. Manufacturing method according to claim 1, **characterized in that** in step (1) the cutting pieces of fabric are resin finished.

5. Manufacturing method according to claim 1, **characterized in that** in the stereo ironing process, the press parameters are set as follows: temperature 150 ~ 180°C, pressure of 2 ~ 8 kg/cm², 4 ~ 15 seconds.

6. Manufacturing method according to claim 1, **characterized in that** the polyurethane adhesive materials can be solid polyurethane adhesive materials or can be liquid polyurethane adhesive materials.

Patentansprüche

1. Herstellungsverfahren für ein Naturfaser enthaltendes, nahtfreies Hemd mit einem Baumwollgewebeanteil von 100% oder aus Leinengewebe oder mit einem Baumwollgewebeanteil von 65%, umfassend ein Kragenteil (1), ein Vorderteil (2), ein Hinterteil (3), ein Schulterteil (4), ein Ärmelteil (5), ein Stulpenteil (6) und ein Saumteil (7), ein Leistenteil (8) und ein Taschenteil (9), wobei das Herstellungsverfahren die folgenden Schritte umfasst:

(1) Schneidprozess: Schneiden von Naturfaser-gewebe in Kleidungsstücke, wobei die Kleidungsstücke das Kragenteil (1), das Vorder-teil (2), das Hinterteil (3), das Schulterteil (4), das Ärmelteil (5), das Stulpenteil (6), das Saum-teil (7), das Leistenteil (8) und das Taschenteil (9) umfassen, wobei alle oder ein Teil der Teile unter Verwendung aneinandergrenzenden Schneidens geschnitten werden,

(2) Bondverbindungsprozess: Verbindungsad-häsion angrenzender Teile, wobei halbe Abde-ckungs - Nähte, parallel oder außen angeord-net, zum Verbinden verwendet werden, wobei einige oder alle der Verbindungen der Klei-dungsstücke durch den Gebrauch einer Heißschmelzklebstofftechnologie durchgeführt werden, wobei Polyurethanklebstoffmaterialien verwendet werden, um all die Teile in ein Gan-zes zu verbinden,

(3) dreidimensionaler Bügelprozess: Auswahl einer Bogen-angepassten Stereo-Bügelma-schine zum Bügeln und Formen aller der Ver-bindungen, und

(4) Kühlungsprozess: Verwendung einer Gas-

absaugungsvorrichtung zum schnellen Abkühlen der Verbindungen auf Raumtemperatur,

dadurch gekennzeichnet, dass

für die Produktion eines nahtfreien Hemdes mit einem Baumwollgewebeanteil von 100% die Breite des Polyurethanklebstoffmaterials in Schritt (2) entsprechend aus 2 mm, 4 mm bis 6 mm ausgewählt wird, wobei es eine Dicke von 0,02 mm und 0,04 mm aufweist,

und dadurch, dass

für die Produktion eines nahtfreien Hemdes mit einem Leinengewebe die Breite des Polyurethanklebstoffmaterials in Schritt (2) entsprechend als 8 mm und 10 mm ausgewählt wird und die Dicke 0,04 mm ist,

und dadurch, dass

für die Produktion eines nahtfreien Hemdes mit einem Baumwollgewebeanteil von 65% die Breite des Polyurethanklebstoffmaterials in Schritt (2) entsprechend aus 6 mm und 8 mm ausgewählt wird, wobei es eine Dicke von 0,03 mm und 0,05 mm aufweist.

2. Herstellungsverfahren gemäß Anspruch 1, **dadurch gekennzeichnet, dass**, beim Schneiden der Teile, Polyurethanklebstoffmaterialien verwendet werden, um an Rändern eines Hemdteils zu haften.

3. Herstellungsverfahren gemäß Anspruch 1, **dadurch gekennzeichnet, dass**, nach dem Schneiden der Teile, auch alle Hemdränder oder Teilränder, in glatte Stoffränder gefaltet werden und dann die Hemdränder oder die glatten Stoffränder durch Polyurethanklebstoffmaterialien geklebt werden.

4. Herstellungsverfahren gemäß Anspruch 1, **dadurch gekennzeichnet, dass** in Schritt (1) die Schnittteile des Gewebes harzvergütet sind.

5. Herstellungsverfahren gemäß Anspruch 1, **dadurch gekennzeichnet, dass** in dem Stereo - Bügelprozess, die Druckparameter wie folgt eingestellt sind: Temperatur 150~180°C, Druck von 2~8 kg/cm², 4~15 Sekunden,

6. Herstellungsverfahren gemäß Anspruch 1, **dadurch gekennzeichnet, dass** die Polyurethanklebstoffmaterialien feste Polyurethanklebstoffmaterialien oder flüssige Polyurethanklebstoffmaterialien sein können.

Revendications

1. Procédé de fabrication d'une chemise sans couture contenant des fibres naturelles avec une teneur en tissu de coton de 100 % ou en tissu de lin ou avec une teneur en tissu de coton de 65 %, comprenant

une pièce de col (1), une pièce d'endroit (2), une pièce d'envers (3), une pièce d'épaulement (4), une pièce de manche (5), une pièce de manchette (6) et une pièce de pan (7), une pièce d'empattement (8) et une pièce de poche (9), dans lequel ledit procédé de fabrication comprend les étapes suivantes:

(1) Procédé de découpe: la découpe d'un tissu de fibres naturelles en pièces de vêtements, dans lequel les pièces de vêtements comprennent la pièce de col (1), la pièce d'endroit (2), la pièce d'envers (3), la pièce d'épaulement (4), la pièce de manche (5), la pièce de manchette (6), la pièce de pan (7), la pièce d'empattement (8) et la pièce de poche poitrine (9), dans lequel les pièces sont découpées en totalité ou en partie en utilisant une coupe conjointe,

(2) Procédé de liaison de raccordement: adhérence des joints de pièces adjacentes, dans lequel des coutures mi-couvrantes, parallèles ou collées à l'extérieur sont utilisées pour les raccordements, dans lequel certains ou la totalité des joints de pièces de vêtement sont fabriqués en utilisant une technologie adhésive thermofusible, dans lequel des matériaux adhésifs en polyuréthane sont utilisés pour raccorder la totalité des pièces en un tout,

(3) Procédé de repassage tridimensionnel: sélectionner une machine de repassage stéréo de type épousant les arcs pour repasser et façonner tous les joints et

(4) Procédé de refroidissement: utilisation d'un dispositif d'aspiration de gaz pour refroidir rapidement les joints à la température ambiante,

caractérisé en ce que,

pour produire une chemise sans couture avec une teneur en tissu de coton de 100 %, la largeur des matériaux adhésifs en polyuréthane de l'étape (2) est respectivement choisie parmi 2 mm, 4 mm à 6 mm, ayant une épaisseur de 0,02 mm et de 0,04 mm, **et en ce que,**

pour produire une chemise sans couture à partir de tissu de lin, la largeur des matériaux adhésifs en polyuréthane à l'étape (2) est respectivement choisie à 8 mm et 10 mm et l'épaisseur est de 0,04 mm, **et en ce que,**

pour produire une chemise sans couture avec une teneur en tissu de coton 65 %, la largeur des matériaux adhésifs en polyuréthane à l'étape (2) est respectivement choisie à 6 mm et 8 mm, ayant une épaisseur de 0,03 mm et de 0,05 mm.

2. Procédé de fabrication selon la revendication 1, **caractérisé en ce que**, lors de la découpe des pièces, des matériaux adhésifs en polyuréthane sont adoptés pour coller sur les bords d'une pièce de chemise.

3. Procédé de fabrication selon la revendication 1, **caractérisé en ce que**, après découpe des pièces, tous les bords de chemise ou les bords de parties sont également repliés en bords de tissu lisses et ensuite les bords de chemise ou les bords de tissu lisses sont collés par des matériaux adhésifs en polyuréthane. 5
4. Procédé de fabrication selon la revendication 1, **caractérisé en ce que**, à l'étape (1), les pièces de découpe de tissu sont finies à la résine. 10
5. Procédé de fabrication selon la revendication 1, **caractérisé en ce que**, dans le procédé de repassage stéréo, les paramètres de la presse sont réglés comme suit: température 150~180 °C, pression de 2~8 kg/cm², 4~15 secondes. 15
6. Procédé de fabrication selon la revendication 1, **caractérisé en ce que** les matériaux adhésifs en polyuréthane peuvent être des matériaux adhésifs en polyuréthane solide ou peuvent être des matériaux adhésifs en polyuréthane liquide. 20

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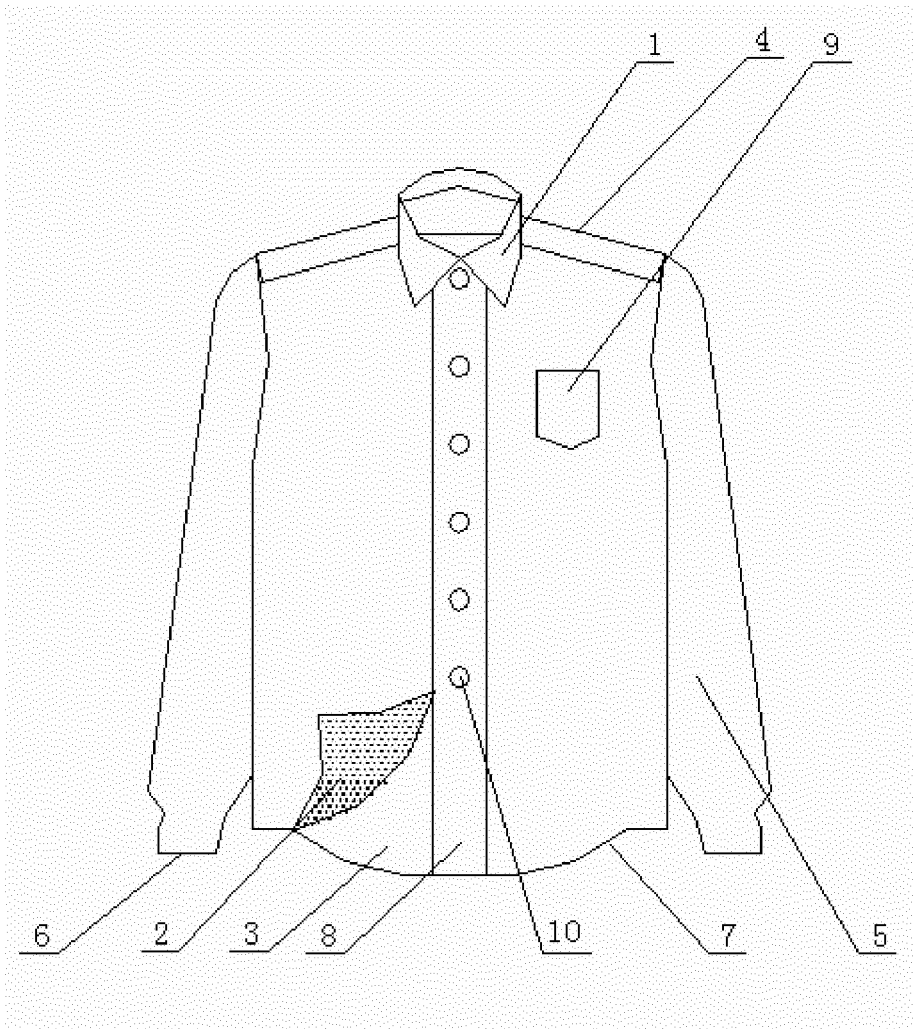


Fig. 1

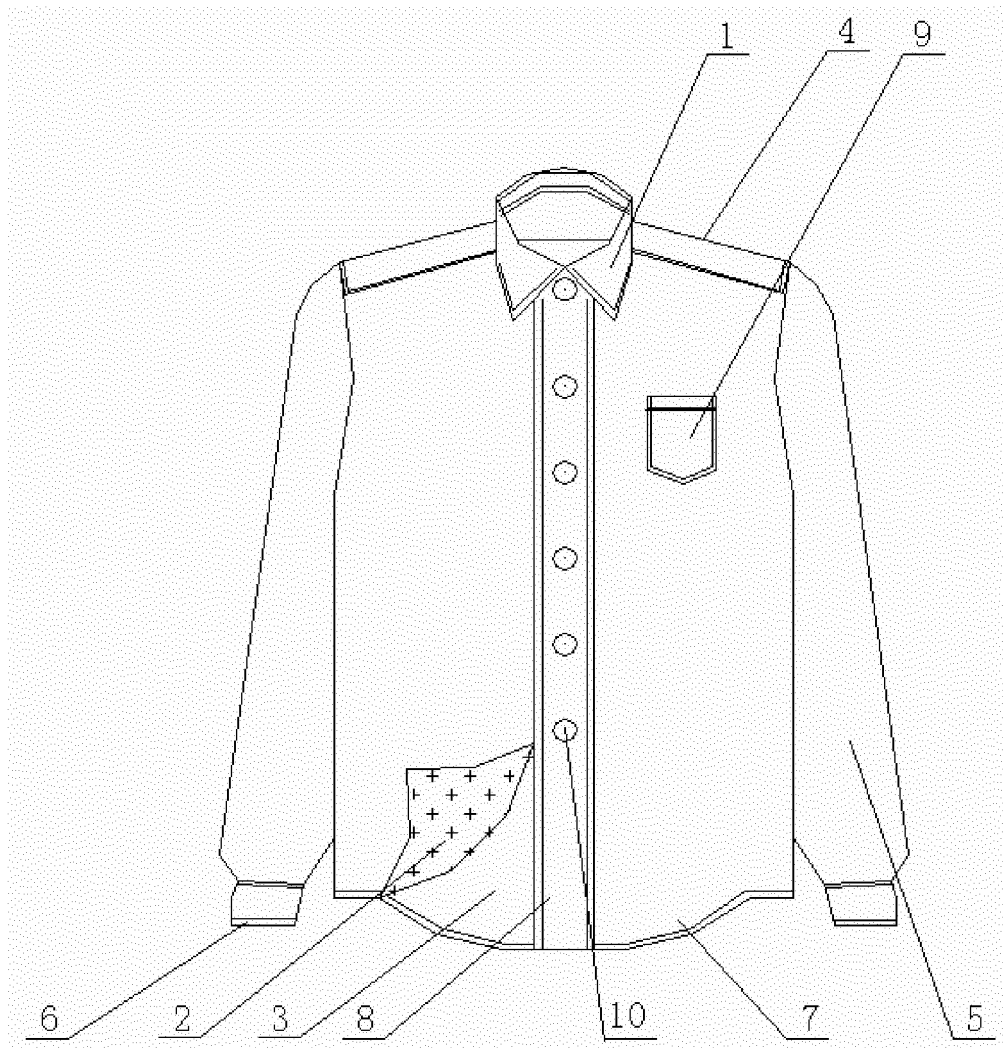


Fig. 2

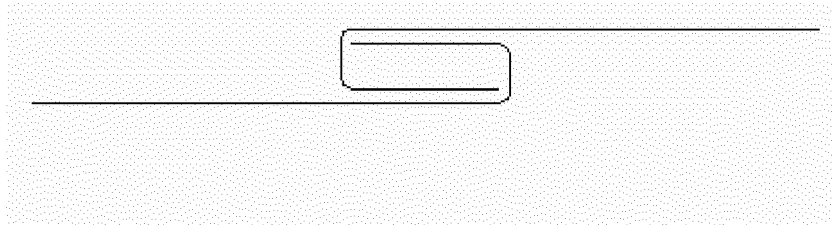


Fig. 3



Fig. 4

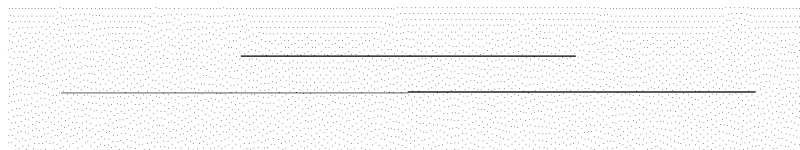


Fig. 5

REFERENCES CITED IN THE DESCRIPTION

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