



(12) **EUROPEAN PATENT APPLICATION**  
published in accordance with Art. 158(3) EPC

(43) Date of publication:  
**19.10.2005 Bulletin 2005/42**

(51) Int Cl.7: **D05C 17/00**

(21) Application number: **04702621.6**

(86) International application number:  
**PCT/CN2004/000052**

(22) Date of filing: **16.01.2004**

(87) International publication number:  
**WO 2004/074566 (02.09.2004 Gazette 2004/36)**

(84) Designated Contracting States:  
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR  
HU IE IT LI LU MC NL PT RO SE SI SK TR**  
Designated Extension States:  
**AL LT LV MK**

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(30) Priority: **21.01.2003 CN 03113603**

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(54) **A PROCESS FOR APPLIQUEING AND EMBROIDERING ON A MESH FABRIC**

(57) A process for appliqueing and embroidering on mesh fabric includes such steps as making pieces of applique pattern, locating a water-soluble paper or a water-soluble cloth on the mesh fabric, embroidering the outline of the applique pattern on a water-soluble paper or a water-soluble cloth of the mesh-fabric, laying pieces of applique inside of the outline to embroider and seam, then staining, water-dissolving and finalizing the embroidered fabric. The invention solves a problem of poorly stereo effect of embroidery as the result of em-

broidering and appliquéing on the mesh fabric simultaneously. With the invention, many steps of embroidering and appliquéing are completed at different time by using one embroidery machine. Various types of colored threads can be used to embroider an outline with rope coiled up and some holes with different size and shape are formed inside of the outline. At the result, the mesh fabric with embroidery and applique presents various stereo patterns of different colors so that it appears to be more esthetical than the ordinary applique embroidery.

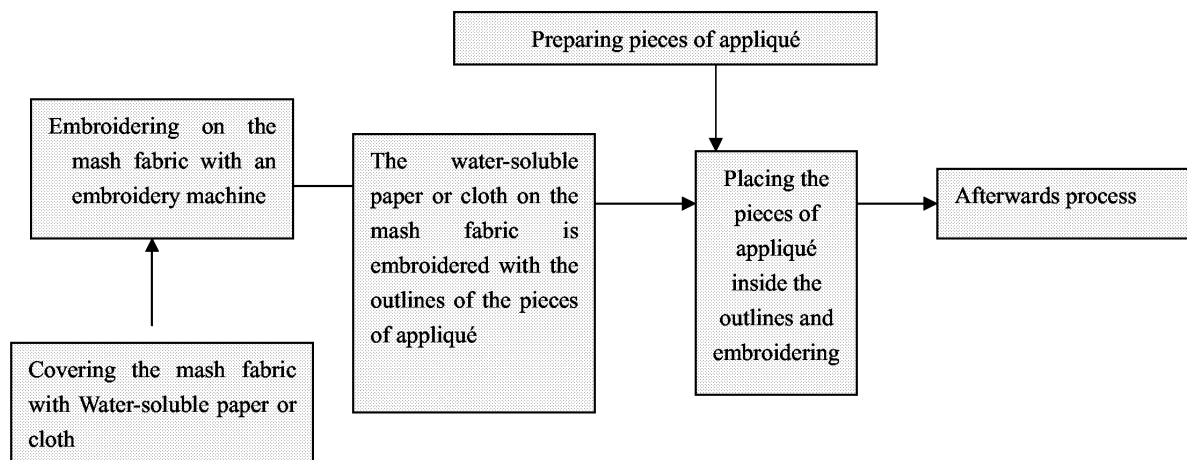


Figure 1

## Description

### Technical field

**[0001]** The invention relates to a method of appliqué embroidering. More particularly, the invention relates to a method of appliqué embroidering on mash fabric.

### Background

**[0002]** Now most underclothes and underpants are made of mash fabric that is thin and has good gas permeability. Usually the mash fabric is processed by appliqué embroidering so that the underclothes and underpants can be more beautiful. Now the method of appliqué embroidering is the following: the mash fabric is covered with the appliqué cloth, and then embroidering is carried out simultaneously on both the mash fabric and the appliqué cloth with an embroidery machine. After that, the extra appliqué cloth outside the embroidering outline is cut out, and the effect of appliqué embroidering can be obtained. The shortage of this method is that the product made by it has few kind of color, with few style and lack of change, and with little stereoscopic effect. Additionally, the marginal of the pieces of appliqué is not seamed with embroidery thread, exposed on the marginal of the embroidery are the cutting edges of the appliqué cloth. The thread is easy to come off or easy to be drawn off. Moreover, the outline of the appliqué is cut out by hand and easy to be left with different amount of appliqué cloth, which results in the whole quality falling. All mentioned above can affect the beauty of the underclothes and underpants.

### Disclosure of the invention

**[0003]** The aim of the invention is to provide a method of appliqué embroidering on mash fabric, the pieces of appliqué are prepared at different time with single embroidery machine, each piece of appliqué with different pattern, different color and made of different material. The mash fabric processed by this method can obtain strong stereoscopic effect.

**[0004]** The method to realize the aim of the invention is as follows:

- a) pieces of appliqué are prepared according to predetermined appliqué pattern;
- b) the mash fabric to be embroidered is covered with water-soluble paper or cloth and put on an embroidery machine, and then embroidered;
- c) the mash fabric of step b is embroidered with the outlines of the pieces of appliqué prepared in step a;
- d) the pieces of appliqué prepared in step a are placed inside the outlines embroidered in step c and embroidered or their marginal are seamed with an embroidery machine;
- e) the mash fabric embroidered undergoes after-

wards process.

**[0005]** The embroidery machines mentioned above can be that of shuttle or of multi-head machine, and the pieces of appliqué can be prepared by cutting out materials, such as cloth, leather, pierces of plastic, band, knit band, fabric article, sponge article, metal article, crystal article etc., by hand or by a cutter. The manners of embroidering by the machines can be forming embroidery, coiling up a rope or cutting an eyelet etc., the said embroidery means pattern is embroidered on the substantive part of the appliqué pattern with an embroidery machine, the said seaming means seaming the marginal of the pieces of appliqué, and the afterwards process means the mash fabric is processed by hand after all embroidering has been finished, for example dyeing-finishing, dissolving with water, and finalizing etc.

**[0006]** The invention overcomes the limitation of prior method with which only one kind of material can be applied on the mash fabric to form appliqué embroidering. According to the method of the invention, more than one embroidery process and appliqué processes can be carried out with one embroidery machine, which results in that the embroidery can be formed with thread of different color or different kind, the embroidery can be formed by coiling up ropes, and cutting eyelets of different size and different shape inside the embroidery. Because the material of the pieces of appliqué can be cloth, pierces of plastic, leather etc., and can be cut out into predetermined shape and size by hand or by a cutter in advance, and the cutting process can be carried out in the same step layer by layer so as to produce effect of levels. The appliqué can be made of material of different color or different kind, and the material to make the pieces of appliqué thicker can be placed under them, so that the thickness between the pieces of appliqué and the mash fabric can be increased, and the stereoscopic effect of protrusion and depression become strong. By the step of embroidering the pieces of appliqué on the mash fabric using an embroidery machine, the edge of the pieces of appliqué can be wholly covered with embroidery thread, prohibiting the edge exposed outside and thread drawn off.

### Description of the Figures

**[0007]**

Figure 1 is the flow chart of the method according to the invention;

Figure 2 shows schematically the structure of the pieces of appliqué prepared in step a of the method according to the invention;

Figure 3 shows schematically the step b according to the invention in which embroidery is formed with an embroidery machine;

Figure 4 shows schematically the step d according to the invention in which embroidery and seaming

are formed with an embroidery machine.

### Preferred embodiments of the invention

**[0008]** As shown in figure 1, the process of the invention is mainly to carrying out cutting out with hands or cutting with a cutter, and embroidering with an embroidery machine of multi-head or of shuttle etc., and includes the following steps:

- a) different kinds of material for appliqué are cut out by hand or cut by a cutter according to the appliqué pattern designed in advance to prepare pieces of appliqué 3.
- b) the upper side or the underneath side of the mash fabric 1 is covered with water-soluble paper or cloth, for example non-woven interlining, and the mash fabric 1 is put on an embroidery machine and embroidered with patterns designed in advance;
- c) the upside of the water-soluble paper or cloth or of the mash fabric is embroidered with the outlines of the pieces of appliqué ;
- d) the pieces of appliqué 3 are placed inside the outlines embroidered in step c, and embroidered or seamed with an embroidered machine;
- e) the mash fabric embroidered undergoes afterwards process.

**[0009]** As shown in figures 2, 3 and 4, according to the invention, different material (for example cloth, leather, and plastic etc.) is cut with a knife or a cutter into the shape according to the appliqué pattern designed in advance to prepare pieces of appliqué 3. Then embroidery is carried out with an embroidery machine of multi-head or shuttle, the process of which is the following, the upper side or underneath side of the mash fabric 1 is covered with water-soluble paper or cloth made of non-woven interlining, and embroidery pattern 2 is formed as designed on the mash fabric, or on the water-soluble paper or cloth, for example embroidering laces, or flowers, or coiling up ropes (4), that is, laces or flowers are formed with cord thicker than thread, or cutting eyelets, that is, eyelets are formed, patterns are cut or other operations are carried out at the same time as embroidery is formed with the steel knife of the embroidery machine or other cutters. When forming appliqué, firstly the water-soluble paper or cloth is embroidered with the outlines of the pieces of appliqué, then the pieces of appliqué 3 are placed inside the outlines, and each substantive part of pieces appliqué 3 is embroidered with the embroidery machine of multi-head or shuttle, or the pieces of appliqué are seamed along the marginal, so that the pieces of appliqué are fixed on the mash fabric or on the water-soluble paper. Finally the mash fabric to which all embroidery process has been finished is sent to undergo afterwards process, including dying-finishing, dissolving in water and finalizing etc.

**[0010]** According to the invention, sponge, cotton,

and feather stretching outside etc. can be placed or pasted under the pieces of appliqué as the embroidery is formed on the pieces of appliqué with the machine so as to improve the protrusion effect of the pieces of appliqué on the mash fabric, increase the stereoscopic effect of the pieces of appliqué and wholly increase their outlook and feeling of touch.

**[0011]** According to the invention, embroidery, ropes or eyelets etc. are formed on the mash fabric with an embroidery machine of shuttle or multi-head, then the pieces of appliqué are located and embroidered, so that there can be difference between the colors and patterns of the embroidery and those of the pieces of appliqué, which result in several kinds of stereoscopic patterns simultaneously on the mash fabric, each of which presents several colors, different patterns and styles. The mash fabric processed with the method according to the invention is more beautiful than that processed by the prior method with single appliqué embroidering. Coiling up ropes and cutting eyelets mentioned above are prior art of the field, for example, coiling up ropes means that embroidery laces or flowers are formed with cord thicker than thread, and cutting eyelets means that eyelets are formed, patterns are cut at the same time as embroidery is formed with the steel knife of the embroidery machine or other cutters.

**[0012]** The mash fabric 1 mentioned in the invention is usually used to make underclothes, underpants and wedding gown etc., which has small hole and soft.

**[0013]** According to the invention, the pieces of appliqué 3 cut with a cutter can be of different shape and can be cut in the same step layer by layer so as to allow the pieces of appliqué with the effect of levels. If two pieces of cloth of different color are cut at the same time so that the small pattern overlaps on the large pattern, the pieces of appliqué can give a visual effect of levels. The cutting can be carried out with a laser, which carves a figure or a pattern on the cloth of appliqué. It is not easy for the cutting edges of pieces of appliqué to come off because they are cut with a laser, and the stereoscopic effect of appliqué improved.

**[0014]** According to the invention, embroidery threads of different colors and different kinds can be used to form embroidery on the pieces of appliqué or seam them, and the appliqué presents different colors and styles.

**[0015]** According to the invention, when seaming the pieces of appliqué with an embroidery machine, all the edges of the pieces of appliqué can be covered with embroidery thread and prohibited from exposing outside, and the appliqué are more beautiful.

### Claims

1. A method of appliqué embroidering on mash fabric, characterized in that the method includes the following steps:

- a) pieces of appliqué (3) are prepared according to predetermined appliqué pattern;
- b) the mash fabric (1) to be embroidered is covered with water-soluble paper or cloth and put on an embroidery machine, and then embroidered according to the patterns designed in advance;
- c) the mash fabric of step b is embroidered with the outlines of the pieces of appliqué prepared in step a;
- d) the pieces of appliqué (3) prepared in step a are placed inside the outlines embroidered in step c and embroidered or seamed with an embroidery machine;
- e) the mash fabric embroidered undergoes afterwards process.
2. A method of appliqué embroidering on mash fabric as claimed in claim 1, **characterized in that** the embroidery machine of step d is that of shuttle or of multi-head.
3. A method of appliqué embroidering on mash fabric as claimed in claim 1, **characterized in that** the pieces of appliqué of step a are cut out with hands or cut by a cutter.
4. A method of appliqué embroidering on mash fabric as claimed in claim 1 or 3, **characterized in that** the material for pieces of appliqué are cloth, leather, pieces of plastic, band, knit band, fabric article, sponge article, metal article, or crystal article.
5. A method of appliqué embroidering on mash fabric as claimed in claim 1, **characterized in that** the embroidering of step b includes embroidering patterns (2), coiling up rope (4) or cutting eyelets (5).
6. A method of appliqué embroidering on mash fabric as claimed in claim 1, **characterized in that** the embroidering on the pieces of appliqué with an embroidery machine in step d means patterns are embroidered on the substantive part of the pieces of appliqué with an embroidery machine, the seaming in step d means seaming the pieces of appliqué along their marginal.
7. A method of appliqué embroidering on mash fabric as claimed in claim 1, **characterized in that** the afterwards process of step e means the mash fabric is processed by dying-finishing, dissolving with water and finalizing after all embroidering or seaming processes have been finished.
8. A method of appliqué embroidering on mash fabric as claimed in claim 1, **characterized in that** sponge, cotton, and feather stretching outside can be placed under the pieces of appliqué (3) as material to thicken the pieces of appliqué.

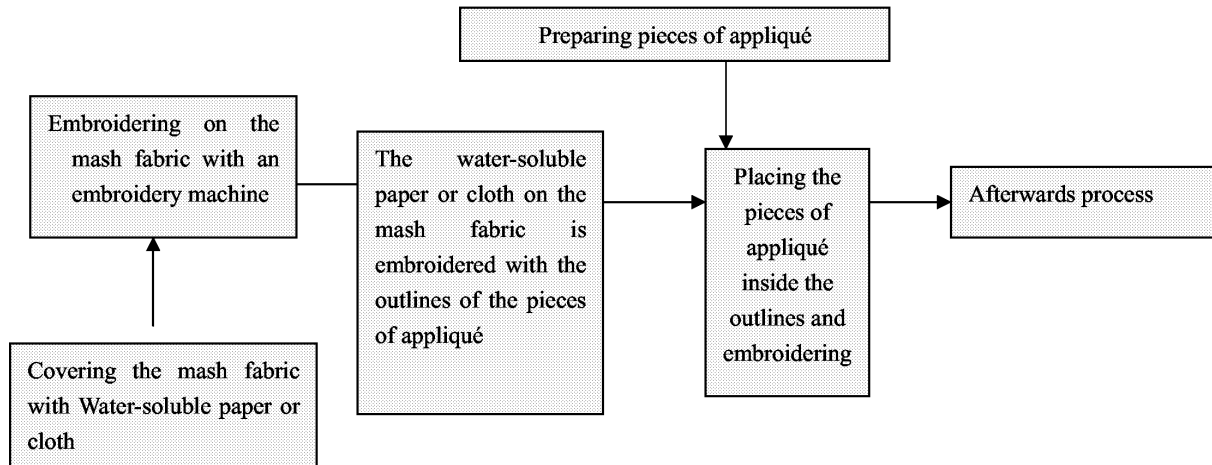


Figure 1

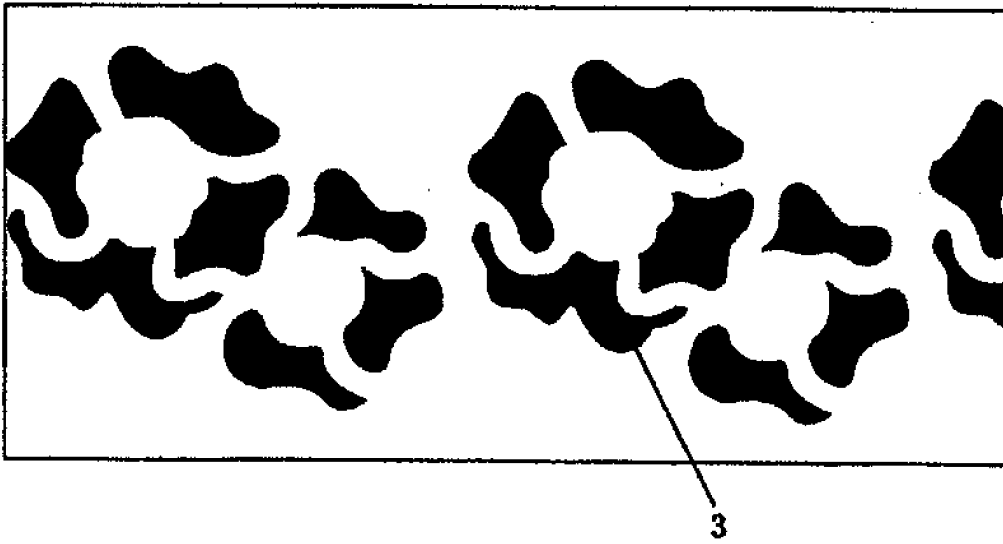


Fig. 2

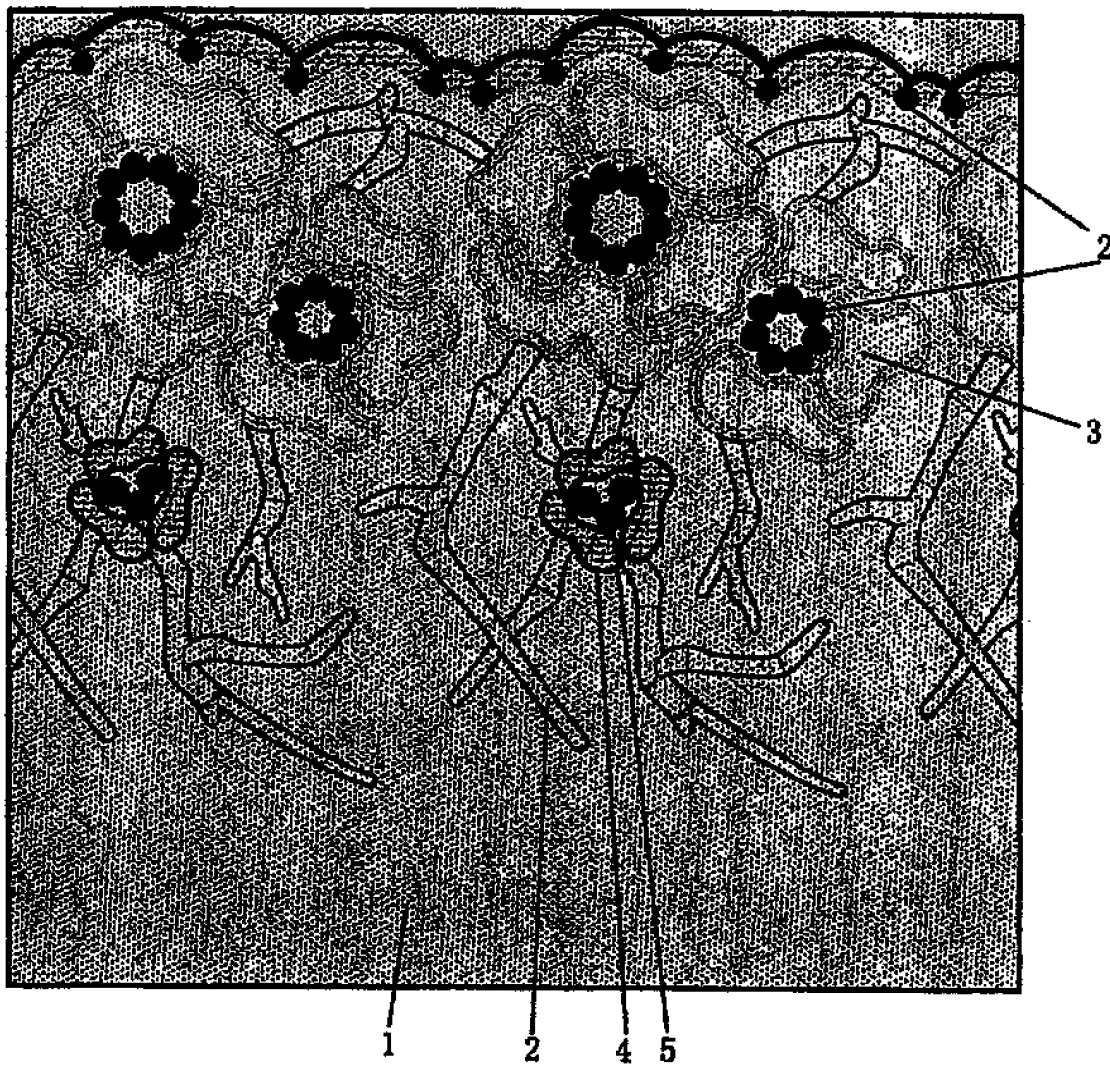


Fig. 3

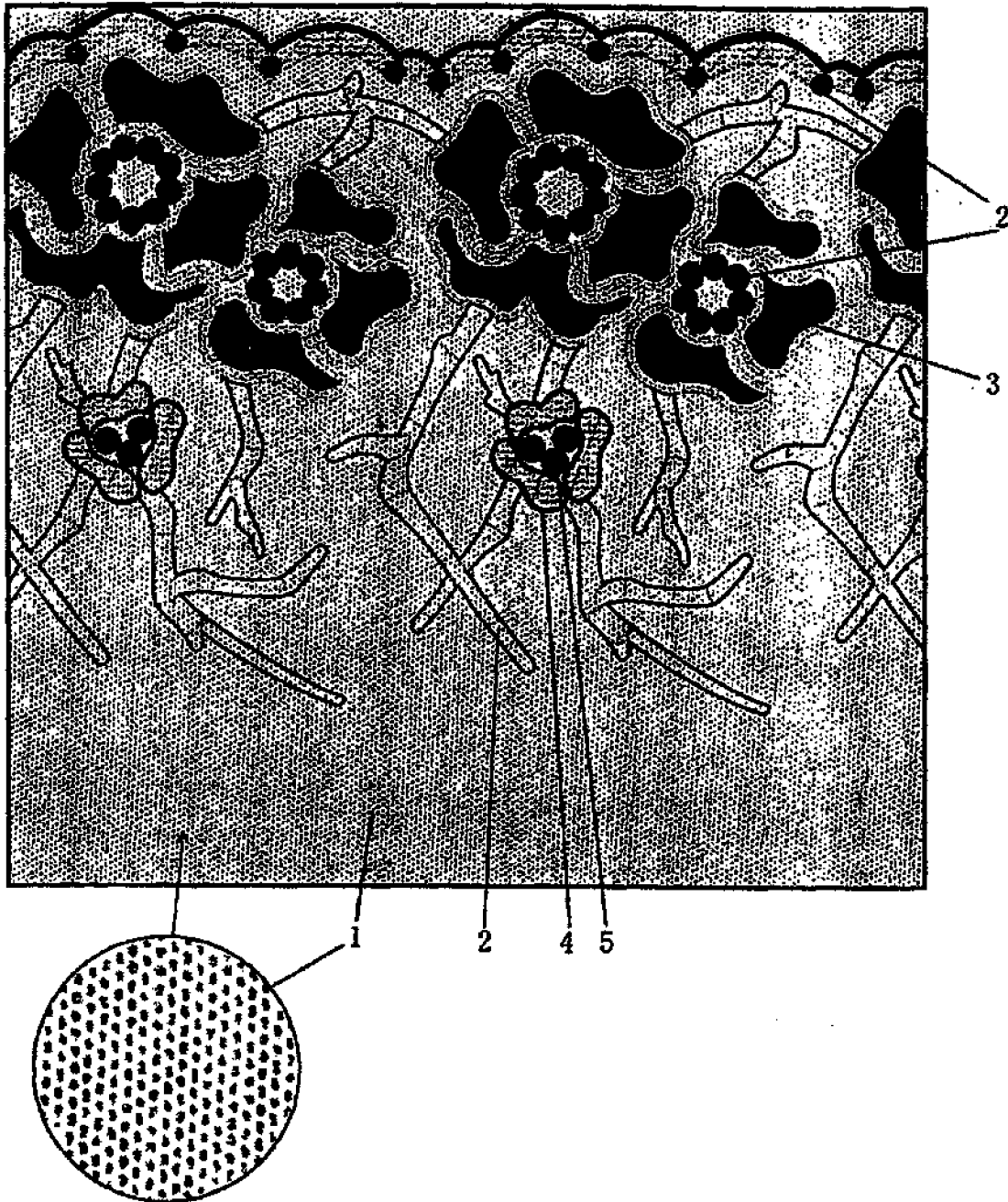


Fig. 4



## INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN/2004/000052

## A. CLASSIFICATION OF SUBJECT MATTER

IPC<sup>7</sup> D05C17/00

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

D05B17/00,D06B1/00,3/00,D06Q1/00,A41G1/00

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

CHINESE INVENTION AND UTILITY 1985-2003

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

EPODOC, CNPAT, PAJ, WPI

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	CN1265436(Jin, zhoumin) 06.September.2000 (06.09.2000) See the whole document	1
A	CN88105204( EMBROIDERY FACTORY) 27.July.1988(27.07.1988) See the whole document	1-8
A	CN2495792Y(LIN xueliang) 19.June.2002(19.06.2002) See the whole document	1-4
A	CN1084915(DRAWNWORK FACTORY OF HARBIN CI )06.April.1994(06.04.1994) See the whole document	1-8
A	JP2000-7807A( NIPPON SYNTHETIC CHEM IND CO )11.January.2000(11.01.2000) See the whole document	1
A	JP2000-69814(DAIWA BOUPORITECH KK; DAIWABO CO TD)08.March.2002(08.11.2002) See the whole document	1
A	US4690084( KRIEGER CORP)01.September.1987(01.09.1987) See the whole document	1

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

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Date of the actual completion of the international search  
12.April.2004(12.04.2004)

Date of mailing of the international search report

17 · JUN 2004 (17 · 06 · 2004)

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