PROCESS OF MANUFACTURING FABRICS HAVING JACQUARD AND TERRY PATTERNS

ABSTRACT

A knitting process includes steps of (a) arranging first needles and second needles horizontally; (b) arranging third needles vertically; (c) moving the first needles rearward to form terries by picking up a thread; (d) moving the first needles forward and laterally to cause the first needles to clear the thread; (e) repeating steps (c) and (d) until a terry pattern is formed on a first surface of the fabric; (f) moving the first needle rearward to form terries by picking up the thread; (g) moving the first needle forward and laterally to cause the first needles to clear the thread; (h) moving the third needles upward and downward; (i) moving the second needles to pick up the thread; and (j) repeating steps (f) to (i) until a Jacquard pattern is formed on a second surface of the fabric. This is a continuous process.
arranging 1st and 2nd needles horizontally

arranging 3rd needles vertically

moving 1st needles rearward to form terries

moving 1st needles forward and laterally to cause the 1st needles to clear thread

repeating steps c and d until a terry pattern is formed on a 1st surface of a fabric

moving 1st needles rearward to form terries

moving 1st needles forward and laterally to cause the 1st needles to clear thread

moving 3rd needles upward and downward

moving 2nd needles to pick up thread

repeating steps f to i until a jacquard pattern is formed on a 2nd surface of fabric

FIG.16
PROCESS OF MANUFACTURING FABRICS HAVING JACQUARD AND TERRY PATTERNS

BACKGROUND OF THE INVENTION

[0001] Field of the Invention

[0002] The invention relates to knitting and more particularly to a process of manufacturing fabrics having jacquard and terry patterns.

[0003] Description of Related Art

[0004]Conventionally, a jacquard machine is capable of manufacturing articles having a jacquard pattern. The present inventor is not aware that there are knitting machines capable of manufacturing articles having a jacquard pattern on one surface and a terry pattern on the other surface commercially available.

[0005] Thus, the need for improvement still exists.

SUMMARY OF THE INVENTION

[0006] It is therefore one object of the invention to provide a knitting process, comprising the steps of (a) arranging first needles and second needles horizontally; (b) arranging third needles vertically; (c) moving the first needles rearward to form terraces by picking up a thread; (d) moving the first needles forward and laterally to cause the first needles to clear the thread; (e) repeating steps (c) and (d) until a terry pattern is formed on a surface of the fabric; (f) moving the first needle rearward to form terraces by picking up the thread; (g) moving the first needle forward and laterally to cause the first needles to clear the thread; (h) moving the third needles upward and downward; (i) repeating steps (f) to (i) until a jacquard pattern is formed on a second surface of the fabric.

[0007] The above and other objects, features and advantages of the invention will become apparent from the following detailed description taken with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] FIG. 1 is a perspective view of a first needle of the invention;

[0009] FIG. 2 is a perspective view of a second needle of the invention;

[0010] FIG. 3 is a perspective view of a third needle of the invention;

[0011] FIG. 4 is a perspective view of a knitting machine incorporating the first, second, and third needles;

[0012] FIG. 5 is a perspective view showing a first arrangement of the first and second needles;

[0013] FIGS. 6, 7, 8, and 9 are perspective views showing four continuous steps of the first jacquard picking up thread respectively;

[0014] FIG. 10 is a perspective view showing a second arrangement of the first and second needles;

[0015] FIG. 11 is a perspective view showing a first arrangement of the third needle;

[0016] FIG. 12 is a perspective view showing a second arrangement of the third needles;

[0017] FIG. 13 is a perspective view showing a fabric having a jacquard pattern on one surface;

[0018] FIG. 14 is a perspective view showing the fabric having a terry pattern on the other surface;

[0019] FIG. 15 is a side elevation of the fabric; and

[0020] FIG. 16 is a process of manufacturing fabrics having jacquard and terry patterns in accordance with the invention.

DETAILED DESCRIPTION OF THE INVENTION

[0021] Referring to FIGS. 1 to 15, components of a knitting machine according to the invention are shown.

[0022] As shown in FIGS. 1 to 3, a first needle 2 includes a hook 21 at one end, an opening 22 defined by the hook 21, and an intermediate riser 23. A second needle 3 includes a hook 31 at one end and a riser 32 at the other end. A third needle 4 includes a hook 41 at one end and a riser 42 at the other end.

[0023] The first needles 2 and the second needles 3 are arranged horizontally and the third needles 4 are arranged vertically (see FIG. 4).

[0024] A process of manufacturing a terry pattern 11 includes the steps of moving the first needle 2 rearward to form an uncut loop (i.e., terry) 11 by picking up a thread 1 (see FIGS. 6 and 7), and moving the first needle 2 forward and laterally to cause the opening 22 to clear the thread 1 (see FIGS. 8 and 9). The second needles 3 are motionless in the process (see FIG. 5) and the third needles 4 are motionless in the process (see FIG. 11). As a result, a fabric 10 having a terry pattern 11 on one surface is formed (see FIG. 14).

[0025] A process of manufacturing a jacquard pattern 12 includes the steps of moving the first needle 2 rearward to form an uncut loop (i.e., terry) 11 by picking up a thread 1 (see FIGS. 6 and 7), moving the first needle 2 forward and laterally to cause the opening 22 to clear the thread 1 (see FIGS. 8 and 9), keeping the second needles 3 motionless (see FIG. 10), moving the third needles 4 upward and downward repeatedly (see FIG. 12), and moving the second needles 3 to pick up the thread 1. As a result, the fabric 10 having a jacquard pattern 12 on the other surface is formed (see FIG. 13).

[0026] As shown in FIG. 15, the fabric 10 has a jacquard pattern 12 on top surface and a terry pattern 11 on the bottom surface.

[0027] Referring to FIG. 16 in conjunction with FIGS. 1 to 15, a process of manufacturing fabrics having a jacquard pattern and a terry pattern in accordance with the invention is illustrated. The process comprises the steps of (a) arranging first needles and second needles horizontally; (b) arranging third needles vertically; (c) moving the first needles rearward to form terraces by picking up a thread; (d) moving the first needles forward and laterally to cause the first needles to clear the thread; (e) repeating steps (c) and (d) until a terry pattern is formed on a first surface of a fabric; (f) moving the first needle rearward to form terraces by picking up the thread; (g) moving the first needle forward and laterally to cause the first needles to clear the thread; (h) moving the third needles upward and downward; (i) moving the second needles to pick up the thread; and (j) repeating steps (f) to (i) until a jacquard pattern is formed on a second surface of the fabric.

[0028] While the invention has been described in terms of preferred embodiments, those skilled in the art will recognize that the invention can be practiced with modifications within the spirit and scope of the appended claims.

What is claimed is:

1. A knitting process, comprising the steps of:
   (a) arranging first needles and second needles horizontally;
   (b) arranging third needles vertically;
   (c) moving the first needles rearward to form terraces by picking up a thread;
   (d) moving the first needles forward and laterally to cause the first needles to clear the thread;
(e) repeating steps (c) and (d) until a terry pattern is formed on a first surface of a fabric;
(f) moving the first needle rearward to form terries by picking up the thread;
(g) moving the first needle forward and laterally to cause the first needles to clear the thread;
(h) moving the third needles upward and downward;
(i) moving the second needles to pick up the thread; and
(j) repeating steps (f) to (i) until a jacquard pattern is formed on a second surface of the fabric.

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