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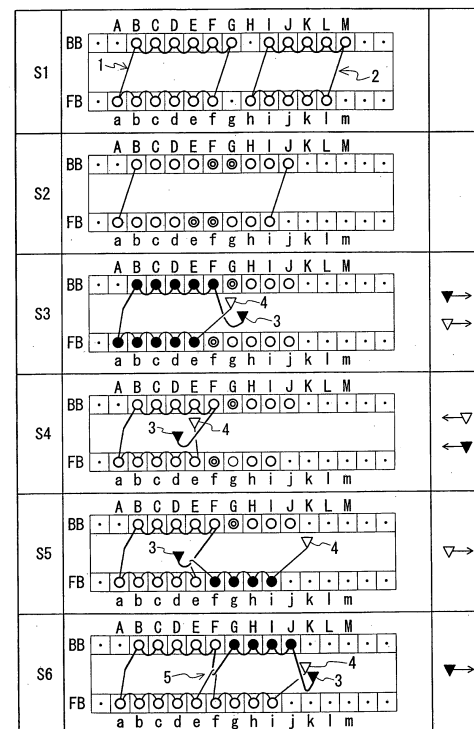
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(54) FABRIC KNITTING METHOD, AND FABRIC

(57) A knitted fabric is knitted using a flat knitting machine including at least a pair of front and back needle beds FB, BB and a plurality of yarn feeders 3, 4 for feeding a knitting yarn to needles arranged in rows in each needle bed FB, BB by feeding a yarn to a needle of a back needle bed BB with a yarn feeder 3 positioned on a front needle bed FB side and to a needle of a front needle bed FB with a yarn feeder 4 positioned on a back needle bed BB side. Stitches are formed with the knitting yarn respectively fed from each yarn feeder 3, 4. Then, each yarn feeder 3, 4 is once moved to opposite direction and returned to the original direction, and stitches are formed. Thus, the knitting yarn fed from one yarn feeder 3 and the knitting yarn fed from the other yarn feeder 4 are interlaced to be hooked with each other between the front and back needle beds FB, BB.

Fig. 1

Description

TECHNICAL FIELD

[0001] The present invention relates to a knitting method of a knitted fabric including a knitted area formed by interlacing knitting yarns respectively knitted with front and back needle beds so as to be hooked with each other when knitting a knitted fabric using a flat knitting machine, and a knitted fabric including the knitted area knitted with the method.

BACKGROUND ART

[0002] The knitted fabric knitted with the flat knitting machine including front and back needle beds includes an area knitted by bridging the knitting yarns to the needles of the front and back needle beds alternately. For example, in Patent Document 1, the crotch-joining of closely joining the knitted fabric portions by bridging the knitting yarns to the front and back knitted fabric portions is performed at the finger crotch part of gloves and socks having tubular finger portions, and such a crotch-joined area corresponds to the above-described area.

[0003] Meanwhile, in Patent Document 2, the setup portion of the knitted fabric knitted by bridging the knitting yarns to the needles of the front and back needle beds alternately is described, and such a setup portion corresponds to the above-described area.

[0004]

Patent Document 1: International Publication WO 2002-052966 pamphlet

Patent Document 2: International Publication WO 2002-101133 pamphlet

DISCLOSURE OF THE INVENTION

PROBLEMS TO BE SOLVED BY THE INVENTION

[0005] However, in the technique of Patent Document 1, blur of stitches occurs since the knitting yarn of one knitted fabric portion is knitted into the other knitted fabric portion. The blur of stitches is a phenomenon where the knitting yarn that is knitted in stands out as an unintended pattern when knitting yarns of different colors are used for the knitted fabric portions, which affects the outer appearance of the knitted fabric.

[0006] The setup portion of the knitted fabric knitted with the technique of Patent Document 2 is knitted so as to bridge the knitting yarn knitted with one of the front or back needle bed to the other needle bed, and as a result, the movement margin of the knitting yarn configuring the setup portion is relatively small. If the movement margin of the setup portion can be made large, the tensile force that acts on the setup portion can be reduced and hence enhancement in the strength of the setup portion can be expected, but the knitting method therefor is not presently

proposed.

[0007] The present invention has been made in view of the above circumstances, and an object of the present invention is to provide a knitting method of a knitted fabric including a knitted area formed without bridging a knitting yarn knitted with one of the front or back needle bed to the other needle bed, and a knitted fabric including the knitted area knitted with such a knitting method.

MEANS FOR SOLVING THE PROBLEMS

[0008] According to the present invention, there is provided a knitting method of a knitted fabric including a knitted area knitted by feeding a yarn to a needle of a back needle bed with a yarn feeder positioned on a front needle bed side and to a needle of a front needle bed with a yarn feeder positioned on a back needle bed side using a flat knitting machine including at least a pair of front and back needle beds and a plurality of yarn feeders for feeding a knitting yarn to needles arranged in rows in each needle bed. And the knitted area in which the knitting yarn fed from one yarn feeder and the knitting yarn fed from the other yarn feeder are interlaced to be hooked with each other between the front and back needle beds is formed through steps 1 to 5, as follows:

step 1 of forming a stitch or a hooked loop with the knitting yarn fed from each yarn feeder with one yarn feeder preceding and the other yarn feeder following; step 2 of moving the one yarn feeder in a direction opposite to an advancing direction in step 1 after step 1; step 3 of moving the other yarn feeder in a direction opposite to an advancing direction in step 1 after step 1; step 4 of forming a stitch or a hooked loop after moving the one yarn feeder in the same direction as the advancing direction in step 1 after step 2 so as to be a state in which the knitting yarn extending from the stitch or the hooked loop formed in step 1 to the one yarn feeder is hooked to the knitting yarn fed from the other yarn feeder and folded back to the stitch or the hooked loop; and step 5 of forming a stitch or a hooked loop after moving the other yarn feeder in the same direction as the advancing direction in step 1 after step 3 so as to be a state in which the knitting yarn extending from the stitch or the hooked loop formed in step 1 to the other yarn feeder is hooked to the knitting yarn fed from the one yarn feeder and folded back to the stitch or the hooked loop.

[0009] In one aspect of the knitting method of the knitted fabric of the present invention, the knitting can be carried out in the order of steps 1, 2, 3, 5, 4 or in the order of steps 1, 3, 2, 5, 4 when knitting the knitted area.

[0010] Further, in one aspect of the knitting method of the knitted fabric of the present invention, the knitting can

be carried out in the order of steps 1, 2, 4, 3, 5 when knitting the knitted area.

[0011] Meanwhile, a knitted fabric portion of the present invention is a knitted fabric knitted using a flat knitting machine including at least a pair of front and back needle beds and a plurality of yarn feeders for feeding a knitting yarn to needles arranged in rows in each needle bed. The knitted fabric has a knitted area including, a one side stitch row including a plurality of stitches configured by one knitting yarn at one of front or back knitted fabric, and another side stitch row, positioned at a position facing the one side stitch row at the other of the knitted fabric, including a plurality of stitches configured by one knitting yarn different from the knitting yarn of the one side stitch row. Further in the knitted area, a first sinker loop connecting a first stitch and a second stitch adjacent in the one side stitch row, and a second sinker loop connecting a third stitch and a fourth stitch adjacent in the other side stitch row are interlaced to hook with each other.

[0012] When setting up the knitted fabric, the setup portion of the knitted fabric is normally formed by forming a hooked loop on the needle of the needle bed. The hooked loop becomes a provisional stitch that is not in the form of a normal stitch when removed from the needle bed. The knitting method of the knitted fabric of the present invention can also be applied to form the setup portion of the knitted fabric, and thus the provisional stitch is also handled as a stitch in the knitted area of the knitted fabric of the present invention, and the knitting yarn connecting the adjacent provisional stitches is also handled as a sinker loop in the knitted area of the knitted fabric of the present invention.

[0013] In one aspect of the knitted fabric of the present invention, a second sinker loop is preferably interlaced to a first sinker loop so as to hook with each other, and furthermore, a third sinker loop different from the second sinker loop is preferably interlaced to the first sinker loop to hook with each other. The third sinker loop is a sinker loop that connects a fourth stitch and a fifth stitch, where the fifth stitch is the stitch adjacent on the side opposite to a third stitch with respect to the fourth stitch of the other side stitch row.

EFFECTS OF THE INVENTION

[0014] According to the knitting method of the knitted fabric of the present invention, the knitted fabric including the knitted area, in which the sinker loop connecting two stitches formed with one needle bed and the sinker loop connecting two stitches formed with the other needle bed are interlaced so as to hook with each other (hereinafter also expressed as interlaced state), can be knitted. For instance, the knitted fabric of the present invention including the knitted area in which the sinker loop in the stitch row of one needle bed is interlaced with the sinker loop in the stitch row of the other needle bed can be knitted by carrying out the knitting in the order of steps

1, 2, 3, 5, 4 or in the order of steps 1, 3, 2, 5, 4. Furthermore, the knitted fabric of the present invention including the knitted area in which the sinker loop in the stitch row of one needle bed is interlaced with two sinker loops in the stitch row of the other needle bed can be knitted by carrying out the knitting in the order of steps 1, 2, 4, 3, 5.

[0015] According to the knitting method of the knitted fabric of the present invention, since the knitting yarn on one knitted fabric portion is not knitted into the other knitted fabric portion at the closely joined portion (knitted area in the knitted fabric of the present invention) when the front and back knitted fabric portions are closely joined as with the finger crotch portion of gloves and socks having tubular finger portions, the blur of the stitches does not occur as in the conventional front and back closing method. Furthermore, since the interlaced portion where the knitting yarns are hooked with each other is not fixed to the knitted fabric portion in the knitted fabric, the movement margin of the knitting yarn is large, and the interlaced portion is less likely to be pulled when the knitted fabric is worn.

[0016] Further, according to the knitting method of the knitted fabric of the present invention, the interlaced portion where the knitting yarns at the setup portion are hooked with each other is not fixed when forming the setup portion of the knitted fabric (knitted area in the knitted fabric of the present invention), and hence the movement margin of the knitting yarn is large and the tensile force that acts on the setup portion can be dispersed.

BRIEF DESCRIPTION OF THE DRAWINGS

[0017]

Fig. 1 is a knitting step diagram of a joint portion joining two tubular knitted fabrics according to a first embodiment.

Fig. 2 is a knitting step diagram related to a setup portion of a gore according to a second embodiment.

DESCRIPTION OF SYMBOLS

[0018]

- 1, 2 tubular knitted fabric
- 3 near side yarn feeder
- 4 far side yarn feeder
- 5 interlaced portion

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0019] The preferred embodiments (first and second embodiments) of the present invention will be described in detail below based on the drawings. The knitting described in the first and second embodiments is carried out with a flat knitting machine having a pair of front and back needle beds extending in a transverse direction and

disposed opposite to each other in a cross section. The flat knitting machine includes a plurality of yarn feeders that reciprocate in a direction parallel to the longitudinal direction of the needle beds. In Fig. 1 and Fig. 2 referred in the description of the first and second embodiments described later, only a near side yarn feeder 3, which is on the near side (front needle bed FB side) when seen from the front surface side of the flat knitting machine, and a far side yarn feeder 4, which is on the far side (back needle bed BB side), are shown.

<First embodiment>

[0020] In a first embodiment, a joint portion formed when joining two tubular knitted fabrics to form one large tubular knitted fabric will be described by way of example for the knitted area knitted such that the knitting yarn knitted with the FB and the knitting yarn knitted with the BB hook with each other. A specific example of two tubular knitted fabrics to be joined includes, for example, two adjacent tubular finger portions in socks and gloves, a body and a sleeve or the like of a sweater, and so on. Two tubular knitted fabrics are handled in the first embodiment, but similar knitting obviously can be performed on greater number of tubular knitted fabrics.

[0021] Fig. 1 shows a knitting step diagram of knitting of joining the adjacent ends of a tubular knitted fabric 1 and a tubular knitted fabric 2, and strengthening the joint portion. In the figure, the left column shows the number of the knitting step (S + number), the middle column shows the state of knitting in each knitting step, and the right column shows the movement direction of the yarn feeder in each knitting step. In the figure, the capital alphabets A to M indicate the needles of the back needle bed BB, and the small alphabets indicate the needles of the front needle bed FB. The knitting yarn fed from the near side yarn feeder 3 arranged on the FB side is shown with a thick line, and the knitting yarn fed from the far side yarn feeder 4 arranged on BB side is shown with a thin line. Furthermore, ● shows a stitch newly knitted in each knitting step, ○ shows an old stitch held at the needle, ⊙ shows double stitches, ▼ shows the near side yarn feeder 3, and ▽ shows the far side yarn feeder 4. For the sake of appropriate description, the number of needles shown is less than the actual number in Fig. 1.

[0022] In S1, the tubular knitted fabric 1 surrounded by B, G, f, a and the tubular knitted fabric 2 surrounded by I, M, 1, h are shown. From such a state, the opposing side ends of the tubular knitted fabric 1 and the tubular knitted fabric 2 are overlapped to obtain the state of S2. In S2, the stitches of the needles F, G and the stitches of the needles I, J of the BB shown in S1 are overlapped by transfer the stitches at the needles F, G of the BB, and the stitches of the needles e, f and the stitches of the needles h, i of the FB shown in S1 are overlapped by transfer the stitches at the needles e, f of the FB. The specific knitting steps of forming the double stitches will not be described here.

[0023] In the subsequent knitting, the front and back knitted fabric portions are closely joined at the position of the double stitches and strengthen the joint portion of the two tubular knitted fabrics using the knitting method of the tubular knitted fabric of the present invention.

The "step + number" shown with a parenthesis after the knitting step "S + number" shows the correspondence relationship of each S3 to S6 and the steps 1 to 5 defined in the knitting method of claim 1. This is the same in the

second embodiment.

[0024] In S3 (step 1), the knitting is carried out up to the middle of the knitting width of the tubular knitted fabric by feeding the yarn to the needles B to F of the BB with the near side yarn feeder 3 preceding and feeding the yarn to the needles a to e of the FB with the far side yarn feeder 4 following. The preceding and the following of the yarn feeders may be interchanged, in which case, the order of the yarn feeders in the description of the subsequent knitting steps is interchanged.

[0025] In S4 (step 2 + step 3), the near side yarn feeder 3 and the far side yarn feeder 4 are moved in the direction opposite to S3 from each position knitted up to the middle of the knitting width of the tubular knitted fabric in S3. The order of moving the yarn feeders is arbitrary. The knitting yarns extending from the respective yarn feeder intersect due to the positional relationship of the last knitted stitch and each yarn feeder.

[0026] In S5 (step 5), the far side yarn feeder 4 that performed the knitting afterward in S3 is moved in the direction opposite to S4 to form the stitches with the needles f, g, h, i of the FB. According to S5, a sinker loop connecting the stitch of the needle e and the stitch of the needle f at the FB is interlaced to the knitting yarn extending from the near side yarn feeder 3 to the stitch of the needle F of the BB.

[0027] In S6 (step 4), the near side yarn feeder 3 that performed the knitting first in S3 is moved in the direction opposite to S4 to form the stitches with the needles G, H, I, J of the BB. The order of S6 and the S5 of the previous stage cannot be reversed.

[0028] When performing the knitting after S6, the knitting yarns from each yarn feeder intersect at the right side end of the knitting width so that the ends are joined by performing the knitting in turn-back direction from the state of S6 with the far side yarn feeder 4 preceding and the near side yarn feeder 3 following.

[0029] According to the knitting described above, an interlaced portion 5 in which the sinker loop connecting the stitch at the position of the needle F and the stitch at the position of the needle G and the sinker loop connecting the stitch of the needle e and the stitch of the needle f are interlaced to hook with each other between the front and back knitted fabric portions is formed, as shown in S6. That is, the front and back knitted fabric portions can be closely joined without the knitting yarn on one knitted fabric portion being knitted into the stitches on the other

knitted fabric portion, and thus the blur of the knitting yarn does not occur as in the conventional method of closely joining the front and back knitted fabric portions. Furthermore, since the interlaced portion 5 for closely joining the front and back knitted fabric portions is not fixed to the knitted fabric portion and thus can flexibly follow the movement to the left, right, front, and back, the interlaced portion 5 is less likely to be pulled when the knitted fabric is worn. Furthermore, since the stretch in the lateral direction is suppressed by forming double stitches when joining with the two tubular knitted fabrics in the present embodiment, the interlaced portion 5 is less likely to be seen from the surface.

[0030] In the present embodiment, one interlaced portion 5 of the knitting yarns is formed with respect to one closely joining, but S4 to S6 may be repeated plural times to continuously form a plurality of interlaced portions 5 and increase the strength of the closely joining portion.

<Second embodiment>

[0031] In a second embodiment, a setup portion of a gore formed when joining a sleeve and a body will be described by way of example for the knitted area knitted such that the knitting yarn knitted with the FB and the knitting yarn knitted with the BB hook with each other. Fig. 2 is a knitting step diagram related to the setup portion of the gore. The manner of looking at Fig. 2 is similar to Fig. 1, but ● and ○ in the figure are hooked loops. In Fig. 2, the stitches of the sleeve and the body held at the needle beds are omitted, and only the hooked loops held at the needle beds when forming the setup portion of the gore are shown.

[0032] In S1 (step 1), the hooked loops are formed at the needle a of the FB and the needle B of the BB with the far side yarn feeder 4 preceding and the near side yarn feeder 3 following.

[0033] In S2 (step 2), the far side yarn feeder 4 is moved in the direction opposite to S1, and is positioned on the left than the needle B. In S3 (step 4), the far side yarn feeder 4 is again moved in the same direction as S1 to form a hooked loop with the needle c on the right than the needle b of the FB corresponding to the needle B. Through S2 and S3, the knitting yarn connecting the hooked loop of the needle a and the hooked loop of the needle c in the FB thereby interlaced the knitting yarn extending from the near side yarn feeder 3 to the needle B of the BB.

[0034] In S4 (step 3), the near side yarn feeder 3 is moved in the direction opposite to S1, and is positioned on the left than the needle c. In S5 (step 5), the near side yarn feeder 3 is again moved in the same direction as S1 to form a hooked loop with the needle D on the right than the needle C of the BB corresponding to the needle c. Through S4 and S5, the knitting yarn connecting the hooked loop of the needle B and the hooked loop of the needle D in the BB thereby interlaced the knitting yarn extending from the far side yarn feeder 4 to the needle

c of the FB.

[0035] Thereafter, knitting similar to S1 to S5 is repeated to obtain the state shown in S6.

[0036] According to the knitting described above, the gore including the setup portion where one sinker loop of the stitch row arranged at one needle bed is interlaced with two sinker loops of the stitch row arranged at the other needle bed is formed. The setup portion is strong as the number of interlaced sinker loops is great, but the interlaced portion of the sinker loops is not fixed.

[0037] The present invention is not limited to the above embodiment. The knitting method of the knitted fabric of the present invention can also be applied when closely joining the front and back of a single tubular knitted fabric at the middle of the knitting width and not only when closely joining with respect to the joining of a plurality of tubular knitted fabrics as shown in the first embodiment. For example, use can be made as a knitting method of preventing shift to the front or the back with respect to the tubular product such as tie and scarf. In addition, when joining two tubular knitted fabrics, two sinker loops may be interlaced to one sinker loop as shown in the second embodiment, or one sinker loop may be interlaced to one sinker loop as shown in the first embodiment when forming the setup portion.

Claims

1. A knitting method of a knitted fabric including a knitted area knitted by feeding a yarn to a needle of a back needle bed with a yarn feeder positioned on a front needle bed side and to a needle of a front needle bed with a yarn feeder positioned on a back needle bed side using a flat knitting machine including at least a pair of front and back needle beds and a plurality of yarn feeders for feeding a knitting yarn to needles arranged in rows in each needle bed, wherein the knitted area in which the knitting yarn fed from one yarn feeder and the knitting yarn fed from the other yarn feeder are interlaced to be hooked with each other between the front and back needle beds is formed through steps 1 to 5, in which
 - step 1 of forming a stitch or a hooked loop with the knitting yarn fed from each yarn feeder with one yarn feeder preceding and the other yarn feeder following;
 - step 2 of moving the one yarn feeder in a direction opposite to an advancing direction in step 1 after step 1;
 - step 3 of moving the other yarn feeder in a direction opposite to an advancing direction in step 1 after step 1;
 - step 4 of forming a stitch or a hooked loop after moving the one yarn feeder in the same direction as the advancing direction in step 1 after step 2 so as to be a state in which the knitting yarn extending from the stitch or the hooked loop formed in step 1 to the one

yarn feeder is hooked to the knitting yarn fed from the other yarn feeder and folded back to the stitch or the hooked loop; and

step 5 of forming a stitch or a hooked loop after moving the other yarn feeder in the same direction as the advancing direction in step 1 after step 3 so as to be a state in which the knitting yarn extending from the stitch or the hooked loop formed in step 1 to the other yarn feeder is hooked to the knitting yarn fed from the one yarn feeder and folded back to form the stitch or the hooked loop.

2. The knitting method of the knitted fabric according to claim 1, being carried out in an order of steps 1, 2, 3, 5, 4 or in an order of steps 1, 3, 2, 5, 4.
3. The knitting method of the knitted fabric according to claim 1, being carried out in an order of steps 1, 2, 4, 3, 5.
4. A knitted fabric knitted using a flat knitting machine including at least a pair of front and back needle beds and a plurality of yarn feeders for feeding a knitting yarn to needles arranged in rows in each needle bed; wherein the knitted fabric has a knitted area including,
 - a one side stitch row including a plurality of stitches configured by one knitting yarn at one side of front or back knitted fabric, and
 - another side stitch row, positioned at a position facing the one side stitch row at the other side of the knitted fabric, including a plurality of stitches configured by one knitting yarn different from the knitting yarn of the one side stitch row; wherein
 - a first sinker loop connecting a first stitch and a second stitch adjacent in the one side stitch row, and a second sinker loop connecting a third stitch and a fourth stitch adjacent in the other side stitch row are interlaced to hook with each other.
5. The knitted fabric according to claim 4, wherein
 - a stitch adjacent on a side opposite to the third stitch with respect to the fourth stitch of the other side stitch row is a fifth stitch; and
 - a third sinker loop connecting the fourth stitch and the fifth stitch and the first sinker loop are interlaced to be hooked with each other.

Fig. 1

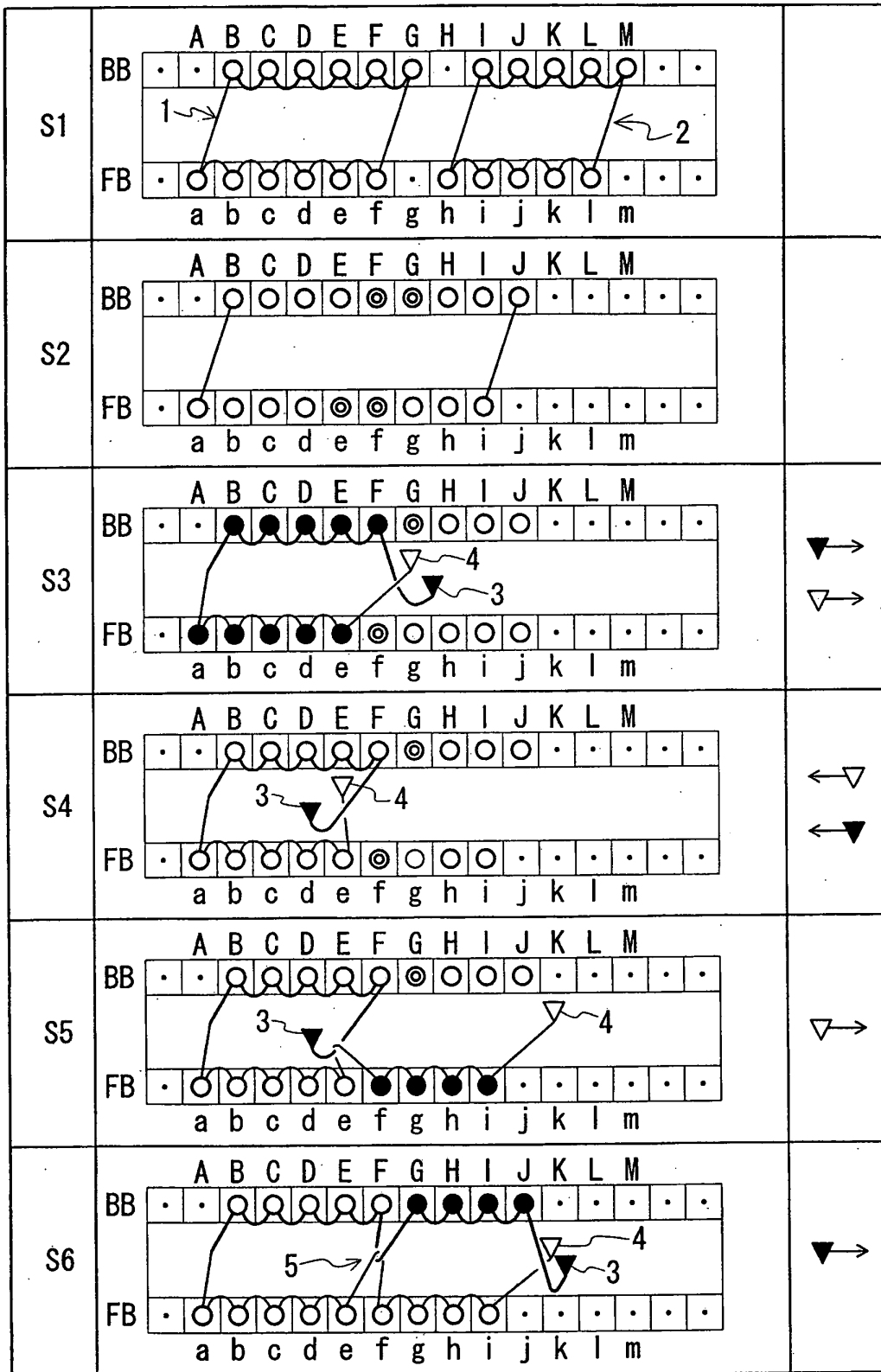
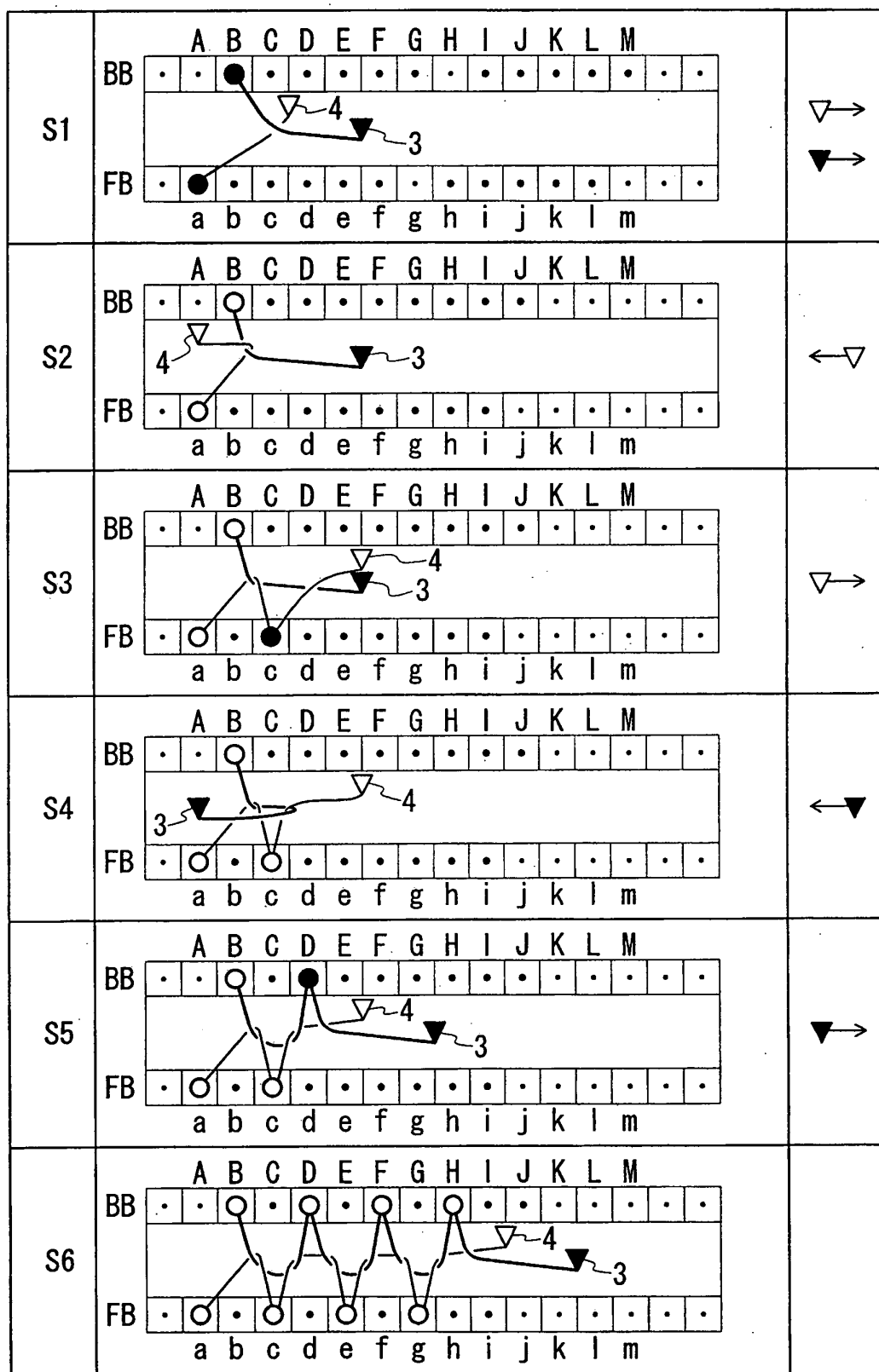


Fig. 2



INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2008/003774

A. CLASSIFICATION OF SUBJECT MATTER D04B1/00(2006.01)i, A41B11/00(2006.01)i, A41D19/00(2006.01)i, D04B7/34(2006.01)i 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) D04B1/00-1/28, D04B21/00-21/20, D04B3/00-19/00, D04B23/00-39/08 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Jitsuyo Shinan Koho 1922-1996 Jitsuyo Shinan Toroku Koho 1996-2009 Kokai Jitsuyo Shinan Koho 1971-2009 Toroku Jitsuyo Shinan Koho 1994-2009 Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP 10-266047 A (Shima Seiki Mfg., Ltd.), 06 October, 1998 (06.10.98), Full text & EP 0867547 A2 & US 6021650 A	1-5
A	WO 2002/052966 A1 (Shima Seiki Mfg., Ltd.), 11 July, 2002 (11.07.02), Full text & EP 1354525 A1 & US 2004/55070 A1 & CN 1484502 A	1-5
A	WO 2002/101133 A1 (Shima Seiki Mfg., Ltd.), 19 December, 2002 (19.12.02), Full text & EP 14081145 A1 & US 2004/231367 & CN 1516761 A	1-5
☒ Further documents are listed in the continuation of Box C. ☐ See patent family annex.		
* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family		
Date of the actual completion of the international search 05 March, 2009 (05.03.09)		Date of mailing of the international search report 17 March, 2009 (17.03.09)
Name and mailing address of the ISA/ Japanese Patent Office		Authorized officer Telephone No.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2008/003774

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP 7-238445 A (Shima Seiki Mfg., Ltd.), 12 September, 1995 (12.09.95), Full text (Family: none)	1-5
P, A	JP 2008-248415 A (Shima Seiki Mfg., Ltd.), 16 October, 2008 (16.10.08), Claim 1 (Family: none)	1-5

Form PCT/ISA/210 (continuation of second sheet) (April 2007)

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2008/003774

The invention of claim 1 is specified by performing Steps 1 to 5 as a method for forming "a knitted portion, in which a knitting yarn fed from one feeder and a knitting yarn fed from the other feeder are entangled to hang on each other between front and back needle beds. It could be supposed to follow Steps 1 - 5 sequentially. It is, however, described in [0027] of the Specification that "S6 and the preceding S5 cannot be sequentially reversed". Hence, it cannot be said that claim 1 complies with the requirement of clarity in PCT Article 6.

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- WO 2002052966 A [0004]
- WO 2002101133 A [0004]