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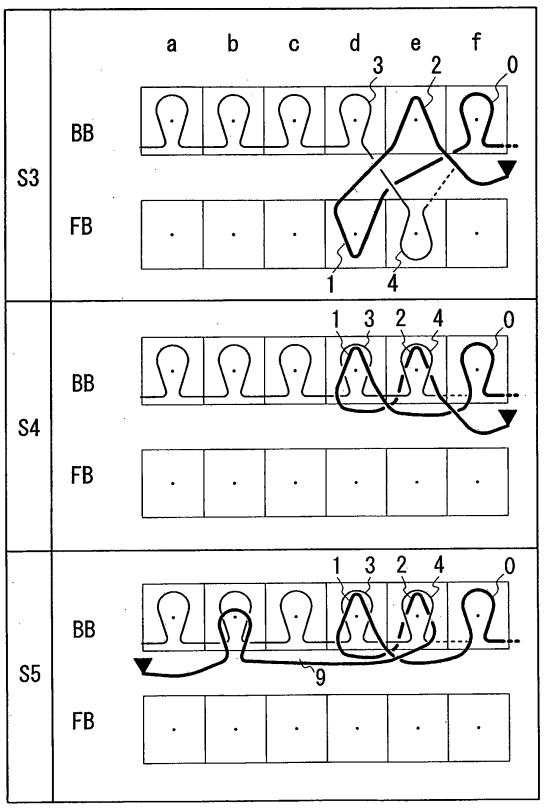
(54) METHOD FOR PREVENTING RAVEL OF KNITTING YARN AND KNITTED FABRIC

(57) An unraveling prevention method of a knitting yarn that exhibits sufficient unraveling prevention effect with a simple step, and a knitted fabric applied with such an unraveling prevention method are provided. The following steps are carried out for the unraveling prevention process of the knitting yarn. Feeding a knitting yarn to a knitting needle to form a first holding point 1 and a second holding point 2 while moving a yarn feeder in a direction opposite to an advancing direction (reversing direction) after moving the yarn feeder in the advancing direction. Transferring at least one of the first holding point 1, the second holding point 2 and two proximate stitches 3, 4 held proximate to each other in either a font or a back needle bed from before the formation of the holding points 1, 2 to overlap the first holding point 1 on an upper side of the proximate stitch 3 and overlap the second holding point 2 on a lower side of the proximate stitch 4. Moving the yarn feeder after overlapping of the proximate stitch 3, 4 and each holding point 1, 2 is terminated to carry out yarn out (or yarn in).

Fig. 2



EP 2 390 393 A1

Description

TECHNICAL FIELD

[0001] The present invention relates to an unraveling prevention method of a knitting yarn at a yarn in portion or a yarn out portion where the knitting yarn is switched in the middle of knitting the knitted fabric when knitting a knitted fabric using a flat knitting machine, and a knitted fabric knitted by applying such a method.

BACKGROUND ART

[0002] In a knitted fabric including stripe patterns, intersia patterns, or the like, the knitting yarn is switched in the middle of knitting the knitted fabric. The portion where the knitting yarn is switched includes a yarn out portion, where the knitting yarn is pulled out from a knitted fabric portion knitted with the knitting yarn before the switching, and a yarn in portion, where the knitting yarn after the switching is introduced to the knitted fabric portion knitted with the knitting yarn before the switching, where the knitting yarn needs to be prevented from unraveling at the yarn in portion and the yarn out portion. As it is very cumbersome to prevent unraveling by hand, proposal has been made to make the flat knitting machine to perform such a task (see e.g., Patent Document 1 and Patent Document 2).

[0003] Patent Document 1 discloses knitting a knitted fabric with a knitting yarn that is yarned in after tucking on stitches of the knitted fabric held on needle beds when performing yarn in, and carrying out yarn out of the knitting yarn after tucking when performing yarn out.

[0004] Patent Document 2 discloses a method for forming a knot with a knitting yarn as a process of preventing unraveling of the knitting yarn at a yarn in portion and a yarn out portion.

PRIOR ART DOCUMENTS

PATENT DOCUMENTS

[0005]

Patent Document 1: Japanese Patent Publication No. 3839496

Patent Document 2: Japanese Patent Publication No. 3099304

DISCLOSURE OF THE INVENTION

PROBLEMS TO BE SOLVED BY THE INVENTION

[0006] However, the techniques of Patent Documents 1 and 2 have the following problems. First, in the technique of Patent Document 1, the unraveling prevention process can be efficiently carried out with a simple step, but the unraveling may not be sufficiently prevented depending on the type of knitting yarn and the knitting yarn may unravel. The technique of Patent Document 2 is very strong for the unraveling prevention process and the knitting yarn is most unlikely to unravel, but includes great number of steps and the process sometimes takes time.

[0007] The present invention has been made in view of the above situations, and an object thereof is to provide an unraveling prevention method of a knitting yarn that exhibits sufficient unraveling prevention effect with a simple step, and a knitted fabric applied with such an unraveling prevention method.

MEANS FOR SOLVING THE PROBLEMS

[0008] The unraveling prevention method of the present invention is an unraveling prevention method of a knitting yarn at a yarn in portion or a yarn out portion when knitting a knitted fabric including at least one of the yarn in portion or the yarn out portion where the knitting yarn is switched in the middle of knitting the knitted fabric using a flat knitting machine having at least a pair of front and back needle beds and in which stitches can be transferred between the front and back needle beds. The unraveling prevention method of the present invention includes the following steps, where a direction of introducing the knitting yarn is an advancing direction of the knitting yarn in the yarn in portion and a knitting direction of immediately before the formation of the yarn out portion is the advancing direction of the knitting yarn in the yarn out portion in the needle beds, and a direction opposite to the advancing direction is reversing direction.

Feeding the knitting yarn to a knitting needle to form a first holding point and a second holding point while moving a yarn feeder in the reversing direction after moving the yarn feeder in the advancing direction.

Transferring at least one of the first holding point, the second holding point and two proximate stitches held proximate to each other in either the front or the back needle bed from before the formation of the holding points to overlap one of the holding points on an upper side of one proximate stitch and overlap the other holding point on a lower side of the other proximate stitch.

Moving the yarn feeder in the advancing direction or the reversing direction after overlapping of the proximate stitch and each holding point is terminated to carry out yarn in or yarn out.

[0009] The proximate stitch in the unraveling prevention method of the present invention refers to the two adjoining stitches on the needle bed or two stitches lined side by side with one stitch in between. In the unraveling prevention method of the present invention, when overlapping a different stitch or pick-up stitch on the stitch or pick-up stitch already held on the needle bed, the former is defined as the upper side and the latter as the lower side.

[0010] In one aspect of the unraveling prevention method of the present invention, the yarn feeder is preferably moved in the advancing direction in the step of

yarn in or yarn out.

[0011] In the unraveling prevention method of the present invention defined as above, the procedure for forming the holding point is not particularly limited, but at least one holding point is preferably formed in the reversing direction. For instance, the first holding point may be formed in the advancing direction and the second holding point may be formed in the reversing direction, or the holding point may not be formed in the advancing direction and two holding points may be formed in the reversing direction. The positional relationship between the first holding point and the second holding point is preferably such that the first holding point is arranged on the advancing direction side and the second holding point is arranged on the reversing direction side. Each of the two holding points may be divided to above and below each proximate stitch of the knitted fabric part and overlapped, where the manner of overlapping is not particularly limited. However there is a suitable knitting procedure for the yarn in portion and the yarn out portion. The suitable knitting procedure will be described below.

[0012] According to the unraveling prevention method of the present invention, the knitting including the following steps is preferably carried out when preventing unraveling of the yarn out portion.

(Step 1) Forming a first holding point consisting of a pick-up stitch, in the middle of carrying out knitting with one needle bed toward the advancing direction, on a knitting needle of the opposing other needle bed.

(Step 2) Transferring one of the proximate stitches on the reversing direction side than the first holding point to an empty needle of the opposing other needle bed.

(Step 3) Moving a yarn feeder in the reversing direction, and forming a second holding point consisting of a pick-up stitch on the knitting needle that became an empty needle due to the transfer in step 2.

(Step 4) Overlapping the first holding point formed in step 1 on the other proximate stitch, and overlapping one proximate stitch transferred in step 2 on the second holding point formed in step 3.

(Step 5) Moving the yarn feeder in the advancing direction, and terminating the knitting of the knitted fabric with a knitting yarn thereof.

[0013] According to the unraveling prevention method of the present invention, the knitting including the following steps is preferably carried out when preventing unraveling of the yarn in portion.

(Step 1) Moving the yarn feeder in the advancing direction.

(Step 2) Transferring one of the proximate stitches on the reversing direction side than a position where the yarn feeder stopped in step 1 to an empty needle of the opposing other needle bed.

(Step 3) Moving the yarn feeder in the reversing direction, forming a first holding point consisting of a pick-up stitch on a knitting needle that became an empty needle by the transfer in step 2 and forming a second holding point consisting of a pick-up stitch on an empty needle of the other needle bed on the reversing direction side than the first holding point.

(Step 4) Transferring one proximate stitch transferred in step 2 to one needle bed and overlapping on the first holding point formed in step 3, and transferring the second holding point formed in step 3 to one needle bed and overlapping on the other proximate stitch.

(Step 5) Moving the yarn feeder in the advancing direction, and starting formation of a new knitted fabric portion with the knitting yarn that is yarned in.

[0014] The knitted fabric of the present invention is a knitted fabric, knitted using a flat knitting machine having at least a pair of front and back needle beds and in which stitches can be transferred between the front and back needle beds, including at least one of a yarn in portion or a yarn out portion in which a knitting yarn is switched in the middle of knitting the knitted fabric. The knitted fabric includes a holding stitch a that directly connects to an end stitch to become a starting edge of the knitted fabric portion newly formed by yarn in in the yarn in portion and directly connects to an end stitch to become a termination of the knitted fabric portion at which the knitting is terminated by yarn out in the yarn out portion, a holding stitch β that is formed proximate to the holding stitch a and that directly connects to the holding stitch α, and a redundant end of the yarn in portion or the yarn out portion that directly connects to the holding stitch β. The knitting yarn from the end stitch to the redundant end is turned back at least once in a knitting width direction, where the holding stitch a and the holding stitch β are divided to the front and the back of each proximate stitch of the knitted fabric portion and overlapped.

[0015] The proximate stitch in the knitted fabric of the present invention refers to a certain stitch and a stitch having the following positional relationship with such a stitch.

(1) A stitch adjoining in a course direction that is the knitting width direction of the knitted fabric.

(2) A stitch adjacent in the course direction with one stitch in between.

(3) A new stitch formed in a wale direction in continuation to the next stitch in the course direction.

[0016] In one aspect of the knitted fabric of the present invention, the knitting yarn of the redundant end is preferably wrapped around to a sinker loop of the stitch to be overlapped with the holding stitch β.

EFFECTS OF THE INVENTION

[0017] The unraveling prevention method of the present invention prevents unraveling of the yarn in portion or the yarn out portion through a simple step compared to the unraveling prevention method of Patent Document 2. According to the unraveling prevention method of the present invention, the knitted fabric of the present invention including the yarn in portion or yarn out portion where each of the holding stitch a and the holding stitch β formed with the knitting yarn that is yarned in or the knitting yarn that is yarned out is divided to the front and back of each proximate stitch of the knitted fabric portion and overlapped can be knitted. The knitted fabric of the present invention has the knitting yarns intertwined in a complex manner at the yarn in portion or the yarn out portion so that the knitting yarn is less likely to be unraveled compared to the knitted fabric formed according to Patent Document 1 although it is inferior to the knitted fabric formed according to Patent Document 2.

[0018] In the unraveling prevention method of the present invention, when the moving direction of the yarn feeder in the process of yarn in or yarn out is the advancing direction, the trace of the knitting yarn in the process of the unraveling prevention process becomes advancing direction → reversing direction → advancing direction, whereby the yarn in portion or the yarn out portion performed with strong unraveling prevention process is obtained. In particular, if the first holding point is arranged on the advancing direction side and the second holding point is arranged on the reversing direction side, and the knitting yarn fed after the second yarn feeding point is extended toward the advancing direction side, the yarn in portion or the yarn out portion performed with a stronger unraveling prevention process is obtained.

[0019] If the knitting procedure is limited for the unraveling prevention method at the yarn out portion, the knitted fabric including the yarn out portion wrapped around the sinker loop of the proximate stitch on which the holding stitch → is overlapped can be knitted. At the yarn out portion, when the knitting yarn of the redundant end of the yarn out portion is pulled, such knitting yarn narrows the root of the proximate stitch on which the holding stitch β is overlapped, and hence the knitted fabric including the yarn out portion that is less likely to unravel is achieved.

[0020] If the knitting procedure is limited for the unraveling prevention method at the yarn in portion, the knitting yarn of the redundant end of the yarn in portion is wrapped around to the sinker loop of the proximate stitch on which the holding stitch β is overlapped and hence the yarn in portion performed with a stronger unraveling prevention process is obtained.

BRIEF DESCRIPTION OF THE DRAWINGS

[0021]

Fig. 1 is a first knitting step diagram of an unraveling prevention method of a yarn out portion according to a first example.

Fig. 2 is a second knitting step diagram of the unraveling prevention method of the yarn out portion according to the first example.

Fig. 3 is a knitting step diagram of an unraveling prevention method of a yarn in portion according to a second example.

MODE FOR CARRYING OUT THE INVENTION

[0022] First and second examples of the present invention will be hereinafter described based on the drawings. In the knitting described in both the first and second examples, the knitting procedure when switching the knitting yarn using a two bed flat knitting machine having at least a pair of front and back needle beds extending in a transverse direction and disposed opposite to each other in a cross direction will be described. The flat knitting machine to use may, obviously, be a four bed flat knitting machine.

FIRST EXAMPLE

[0023] Fig. 1 and Fig. 2 are knitting step diagrams showing a knitting procedure of an unraveling prevention method at a yarn out portion, where FB in the figures indicates the front needle bed, BB indicates the back needle bed, a to f indicate the positions of the knitting needles shown with a dot, and ▼ indicates a yarn feeder. Furthermore, in the figures, a Ω shaped portion formed with a knitting yarn indicated with a heavy line indicates a stitch, and a V shaped portion indicates a pick-up stitch.

[0024] In S0 of Fig. 1, a state in which stitches are held on the knitting needles a to f of the BB is shown. From such a state, the knitting of a knitted fabric portion held on the needle bed is terminated, and the knitting yarn used in the knitting is yarned out. The knitting direction immediately before the formation of a yarn out portion is the left direction in the plane of drawing, where such a direction is referred to as advancing direction and the direction opposite to the advancing direction is referred to as reversing direction (right direction in the plane of drawing) in the present example.

[0025] First, in S1, the yarn feeder used in the knitting of the knitted fabric portion shown in S0 is moved toward the left, and an end stitch 0 (stitch of knitting needle f of BB) that becomes a termination of the knitted fabric portion is formed, and thereafter, a first holding point 1 consisting of a pick-up stitch is formed on the knitting needle d of the FB. Then, in S2, the stitch 4 (proximate stitch) held on the knitting needle e of the BB is transferred to the knitting needle e of the opposing FB. The position of the end stitch 0 may be the position of the knitting needle e of the BB, in which case, the end stitch 0 serves as the proximate stitch. The first holding point 1 consisting of a tuck stitch may be formed on the stitch held on the knitting

needle d of the BB instead of forming the pick-up stitch on the knitting needle d of the FB in S1.

[0026] In S3 of Fig. 2, the yarn feeder is moved toward the right so that the knitting yarn extending from the first holding point 1 is turned back in the knitting width direction, and a second holding point 2 consisting of a pick-up stitch is formed on the knitting needle e of the BB. In S4, the first holding point 1 formed in S1 of Fig. 1 is overlapped on the stitch 3 (proximate stitch) held on the knitting needle d of the BB, and the stitch 4 temporarily held on the knitting needle e of the FB in S2 of Fig. 1 is returned to the knitting needle e of the BB so as to overlap the second holding point 2 formed in S3. If tuck is performed with the knitting needle d of the BB in S1, the transfer of the first holding point 1 in S3 is not necessary.

[0027] Lastly, as shown in S5, the yarn feeder is moved toward the left (advancing direction) in the plane of drawing, and knitting yarn 9 that becomes a redundant end of the yarn out portion is pulled out from the knitted fabric portion. When pulling out the knitting yarn 9, the tuck may be performed on the stitch (knitting needle b of BB) of the knitted fabric portion to enhance the effect of preventing unraveling, as shown in S5. This tuck may be performed on other stitches in the advancing direction.

[0028] The formation of a new knitted fabric portion following a stitch group held on the knitting needles of the BB starts from the state of S5. When a new knitted fabric portion is formed, the first holding point 1 is embedded in the knitted fabric portion as a stitch (holding stitch α) directly connected to the termination stitch 0, and the second holding point 2 is embedded in the knitted fabric portion as a stitch (holding stitch β) directly connected to the redundant end 9. The yarn in shown in the second example to be described later, for example, may be carried out when starting the formation of the new knitted fabric portion.

[0029] At the yarn out portion knitted by the knitting step shown in this example, the holding stitch a and the holding stitch β are arranged divided to the front and the back of the knitted fabric, so that the point where the knitting yarns of a pair of holding stitches and a pair of adjoining stitches cross increases and unraveling becomes less likely to occur. Furthermore, the knitting yarn of the redundant end 9 extending from the holding stitch β (second holding point 2) is wrapped around to a sinker loop of the stitch 4 and the adjoining stitch on the right side, so that the knitting yarn of the redundant end 9 narrows the root of the stitch 4 when the knitting yarn of the redundant end 9 is pulled in the left direction in the plane of drawing, and the knitting yarn of the yarn in portion is less likely to unravel.

[0030] In such knitting steps, S1 and S2, and S3 and S4 can be respectively carried out by moving a carriage once in one direction by using the flat knitting machine mounted with a plurality of cam systems, so that the knitting steps become very simple.

SECOND EXAMPLE

[0031] In the second example, the yarn in for introducing a knitting yarn different from the knitted fabric portion to such an existing knitted fabric portion held on the needle beds, and knitting a knitted fabric portion including a new stitch following the stitches of such a knitted fabric portion will be described based on Fig. 3. Fig. 3 is a knitting step diagram according to the second example, and is viewed in the same way as Fig. 1 and Fig. 2. In Fig. 3, the direction for introducing the knitting yarn is the left direction in the plane of drawing, which direction is referred to as the advancing direction and the direction opposite to the advancing direction is referred to as the reversing direction.

[0032] First, in S1, a yarn feeder for feeding a knitting yarn different from the knitting yarn, with which the stitches held on the knitting needles a to f of the BB are knitted, is moved toward the left in the plane of drawing (advancing direction) and stopped at a position past the knitting needle d. In S2, the stitch 3 (one proximate stitch) held on the knitting needle d of the BB is transferred to the knitting needle d of the opposing FB.

[0033] In S3, the yarn feeder is moved toward the right in the plane of drawing (reversing direction) so that the knitting yarn extending from the redundant end 9 is turned back in the knitting width direction, and the first holding point 1 consisting of a pick-up stitch is formed on the knitting needle d of the BB and then the second holding point 2 consisting of a pick-up stitch is formed on the knitting needle e of the FB. In S4, the stitch 3 temporarily held on the knitting needle d of the FB in S2 is overlapped on the first holding point 1 held on the knitting needle d of the opposing BB, and the second holding point 2 formed on the knitting needle e of the FB in S3 is overlapped on the stitch 4 (other proximate stitch) held on the knitting needle e of the opposing BB. The second holding point 2 in S3 may be a tuck stitch formed on the knitting needle e of the BB, in which case, the transfer of the second holding point 2 in S4 is not necessary.

[0034] The yarn feeder is then moved from the state of S4 toward the left in the plane of drawing (advancing direction) to form a starting stitch not shown in the figure and start the knitting of the new knitted fabric portion. In the knitted fabric knitted in such a manner, the second holding point 2 is embedded in the knitted fabric portion as a stitch (holding stitch α) directly connected to the starting stitch, and the first holding point 1 is embedded in the knitted fabric portion as a stitch (holding stitch β) directly connected to the redundant end 9.

[0035] In the yarn in portion knitted by the knitting step shown in this example, the holding stitch a and the holding stitch β are arranged divided to the front and the back of the knitted fabric, similar to the first example, so that unraveling becomes less likely to occur. Furthermore, the knitting yarn of the redundant end 9 extending from the holding stitch β (first holding point 1) is wrapped around to a sinker loop of the stitch 3 and the adjoining

stitch on the left side, so that the knitting yarn of the redundant end 9 narrows the root of the stitch 3 when the knitting yarn of the redundant end 9 is pulled in the right direction in the plane of drawing, and the knitting yarn of the yarn in portion is less likely to unravel.

[0036] Similar to the first example, S1 and S2, and S3 and S4 can be respectively carried out by moving the carriage including a plurality of cam systems once in one direction.

<OTHER EXAMPLES>

[0037] In the first example and the second example, the knitting of the yarn out portion and the yarn in portion in which the knitting yarn of the redundant end is wrapped around to a sinker loop of the proximate stitches has been described by way of example, but such a knitting method is not the sole case. The concept of the unraveling prevention method of the present invention lies in respectively dividing the first holding point and the second holding point to above and below each proximate stitch for overlapping, and the knitting described below may be carried out.

[0038] In the knitting of the yarn out portion shown in Figs. 1 and 2, the first holding point 1 may be arranged on the lower side of the stitch 3 and the second holding point 2 may be arranged on the upper side of the stitch 4. In this case, the stitch 3 is first transferred to the FB, and the first holding point 1 is formed on the knitting needle of the BB which became an empty needle as a result of such transfer. The stitch 3 transferred to the FB is then overlapped on the first holding point 1 of the BB. The second holding point 2 of tuck stitch is formed on the stitch 4 without transferring the stitch 4, or a pick-up stitch is formed on the empty needle of the FB opposing the stitch 4 and then such a pick-up stitch is overlapped on the stitch 4.

[0039] In the knitting of the yarn in portion shown in Fig. 3, the first holding point 1 may be arranged on the upper side of the stitch 3 and the second holding point 2 may be arranged on the lower side of the stitch 4, in which case, the first holding point 1 including the tuck stitch is formed on the stitch 3 of the BB without transferring the stitch 3, or a pick-up stitch is formed on the empty needle of the FB opposing the stitch 3 and then such pick-up stitch is overlapped on the stitch 3. Furthermore, the stitch 4 is transferred to an empty needle of the FB in advance, and the second holding point 2 is formed on the knitting needle of the BB which became an empty needle as a result of such transfer. Therefore, the stitch 4 transferred to the FB is overlapped on the second holding point 2 of the BB.

[0040] In the examples described above, an example of applying the unraveling prevention method to an intermediate portion in the knitting width direction of the knitted fabric knitted with the BB has been described, but the unraveling prevention method of the present invention may, of course, be applied to the knitted fabric knitted with the FB and also to a front and back boundary portion of a tubular knitted fabric knitted using the FB and the BB.

DESCRIPTION OF REFERENCE NUMERALS

[0041]

0	end stitch (termination stitch)
9	knitting yarn of redundant end
1	first holding point
2	second holding point
3, 4	stitch (proximate stitch)

Claims

1. An unraveling prevention method of a knitting yarn at a yarn in portion or a yarn out portion when knitting a knitted fabric including at least one of the yarn in portion or the yarn out portion where the knitting yarn is switched in the middle of knitting the knitted fabric using a flat knitting machine having at least a pair of front and back needle beds and in which stitches can be transferred between the front and back needle beds, the method comprising the steps of:

where a direction of introducing the knitting yarn is an advancing direction of the knitting yarn in the yarn in portion and a knitting direction of immediately before the formation of the yarn out portion is the advancing direction of the knitting yarn in the yarn out portion in the needle beds, and a direction opposite to the advancing direction is reversing direction,

feeding the knitting yarn to a knitting needle to form a first holding point and a second holding point while moving a yarn feeder in the reversing direction after moving the yarn feeder in the advancing direction;

transferring at least one of the first holding point, the second holding point and two proximate stitches held proximate to each other in either the front or the back needle bed from before the formation of the holding points to overlap one of the holding points on an upper side of one proximate stitch and overlap the other holding point on a lower side of the other proximate stitch; and moving the yarn feeder in the advancing direction or the reversing direction after overlapping of the proximate stitch and each holding point is terminated to carry out yarn in or yarn out.

2. The unraveling prevention method according to claim 1, wherein the yarn feeder is moved in the advancing direction in the step of yarn in or yarn out.

3. The unraveling prevention method according to claim 1 or 2, wherein the knitting including the fol-

lowing steps is carried out when knitting of a knitted fabric portion knitted with one of the front or back needle bed is terminated and yarning out the knitting yarn of the knitted fabric portion.

Step 1 of forming the first holding point consisting of a pick-up stitch, in the middle of carrying out knitting with one needle bed toward the advancing direction, on a knitting needle of the opposing other needle bed.
Step 2 of transferring one of the proximate stitches on the reversing direction side than the first holding point to an empty needle of the opposing other needle bed.
Step 3 of moving the yarn feeder in the reversing direction, and forming the second holding point consisting of a pick-up stitch on the knitting needle that became an empty needle due to the transfer in step 2.
Step 4 of overlapping the first holding point formed in step 1 on the other proximate stitch, and overlapping one proximate stitch transferred in step 2 on the second holding point formed in step 3.
Step 5 of moving the yarn feeder in the advancing direction, and terminating the knitting of the knitted fabric with the knitting yarn.

4. The unraveling prevention method according to claim 1 or 2, wherein the knitting including the following steps is carried out when yarning in a knitting yarn different from the knitted fabric portion to the knitted fabric portion knitted with one of the front or back needle bed.

Step 1 of moving the yarn feeder in the advancing direction.
Step 2 of transferring one of the proximate stitches on the reversing direction side than a position where the yarn feeder stopped in step 1 to an empty needle of the opposing other needle bed.
Step 3 of moving the yarn feeder in the reversing direction, forming the first holding point consisting of a pick-up stitch on a knitting needle that became an empty needle by the transfer in step 2 and forming the second holding point consisting of a pick-up stitch on an empty needle of the other needle bed on the reversing direction side than the first holding point.
Step 4 of transferring one proximate stitch transferred in step 2 to one needle bed and overlapping on the first holding point formed in step 3, and transferring the second holding point formed in step 3 to one needle bed and overlapping on the other proximate stitch.
Step 5 of moving the yarn feeder in the advancing direction, and starting formation of a new knitted fabric portion with the knitting yarn that is yarned in.

5. A knitted fabric, knitted using a flat knitting machine having at least a pair of front and back needle beds and in which stitches can be transferred between the front and back needle beds, including at least one of a yarn in portion or a yarn out portion in which a knitting yarn is switched in the middle of knitting the knitted fabric, the knitted fabric comprising:

a holding stitch α that directly connects to an end stitch to become a starting edge of the knitted fabric portion newly formed by yarn in in the yarn in portion and directly connects to an end stitch to become a termination of the knitted fabric portion at which the knitting is terminated by yarn out in the yarn out portion,
a holding stitch β that is formed proximate to the holding stitch a and that directly connects to the holding stitch a, and
a redundant end of the yarn in portion or the yarn out portion that directly connects to the holding stitch β; wherein
the knitting yarn from the end stitch to the redundant end is turned back at least once in a knitting width direction, and the holding stitch a and the holding stitch β are divided to the front and the back of each proximate stitch of the knitted fabric portion and overlapped.

6. The knitted fabric according to claim 5, wherein the knitting yarn of the redundant end is preferably wrapped around to a sinker loop of the stitch to be overlapped with the holding stitch β.

Fig. 1

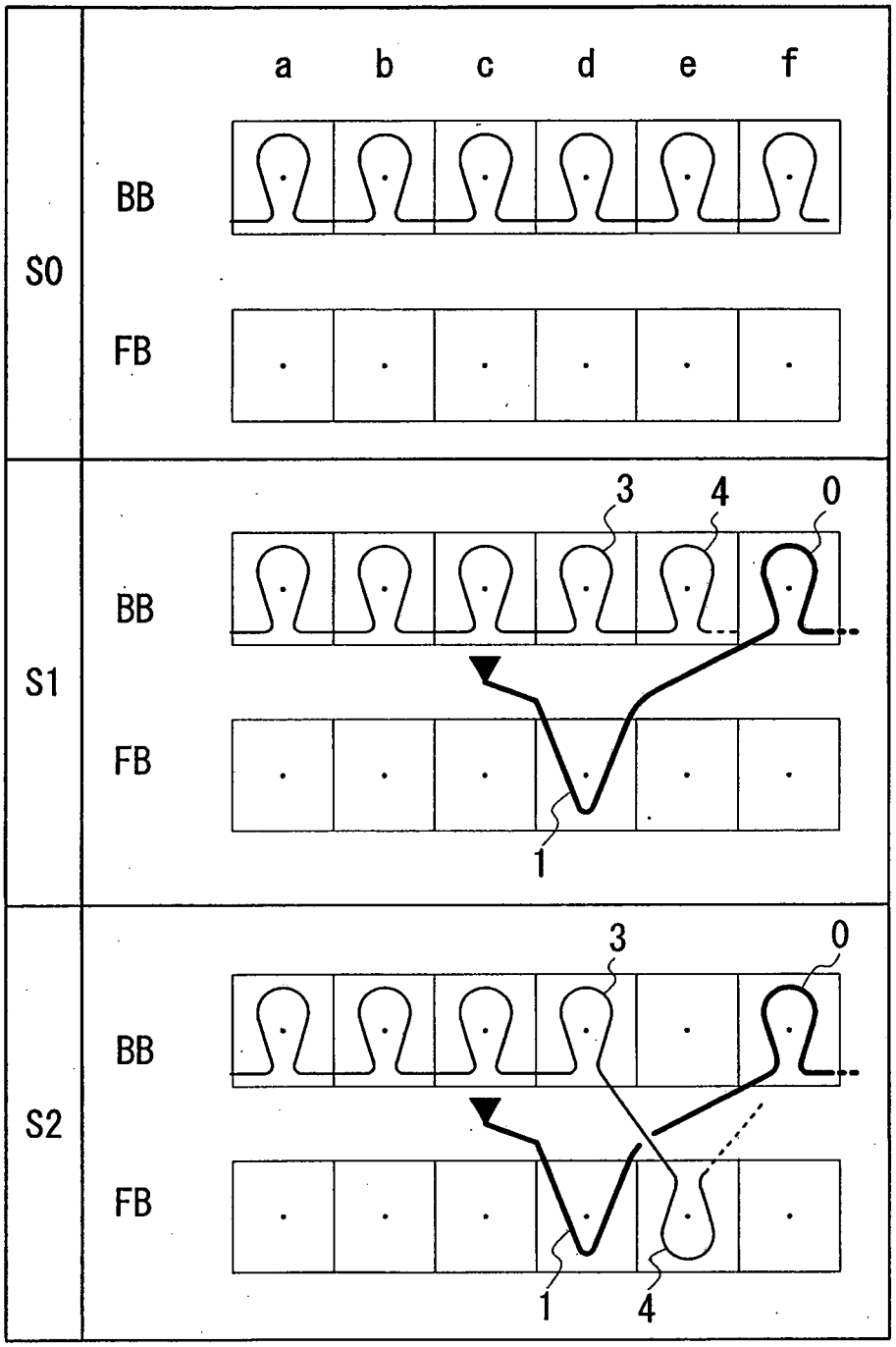


Fig. 2

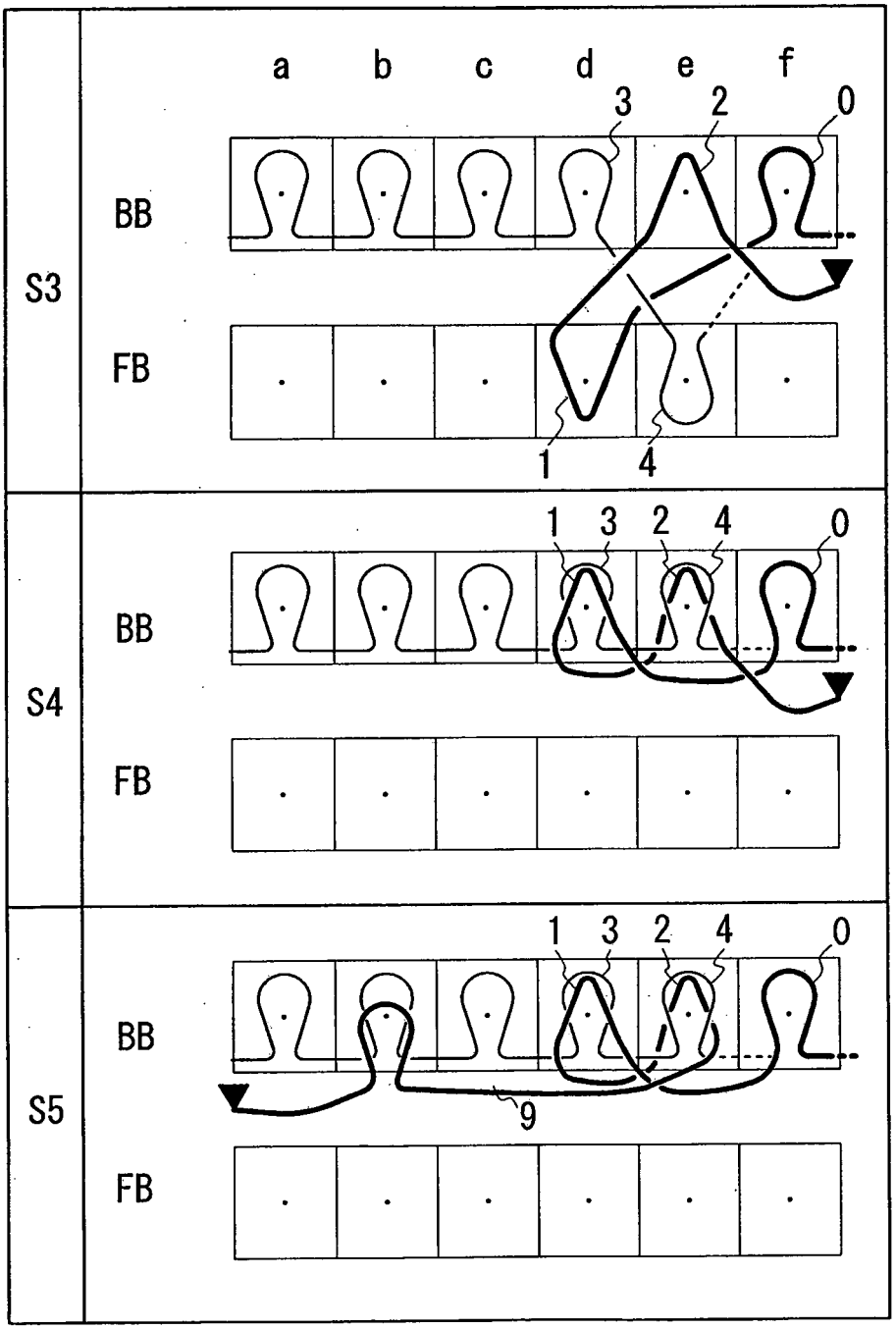
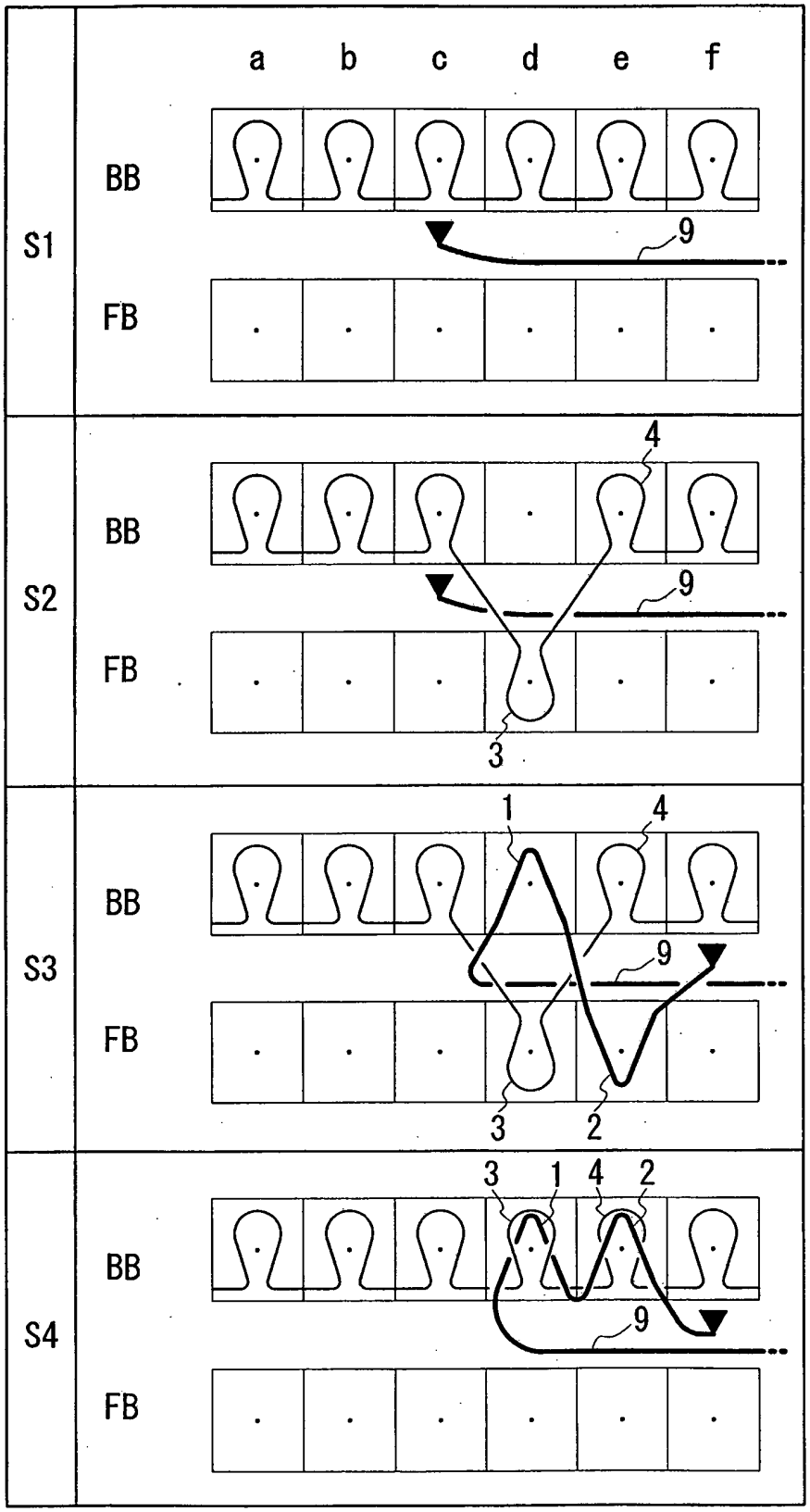


Fig. 3



INTERNATIONAL SEARCH REPORT

International application No.
PCT/JP2009/006480

A. CLASSIFICATION OF SUBJECT MATTER
D04B1/00(2006.01)i, *D04B7/00*(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)
D04B1/00-39/08

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 1996-2010
Kokai Jitsuyo Shinan Koho 1971-2010 Toroku Jitsuyo Shinan Koho 1994-2010

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 3839496 B2 (Shima Seiki Mfg., Ltd.), 01 November 2006 (01.11.2006), entire text (Family: none)	1-6
A	JP 3099304 B2 (Shima Seiki Mfg., Ltd.), 16 October 2000 (16.10.2000), entire text & US 5628209 A & EP 699791 A1	1-6
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☒ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

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14 January, 2010 (14.01.10)	26 January, 2010 (26.01.10)
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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

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