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(54) **Knitted fabric with pocket, and method of knitting the same**

(57) Proposed is a knitted fabric with a high quality pocket which is less likely to lose its shape, and a method of knitting the same. A widening stitch is formed in a pocket branched portion (3) with respect to a base knitted fabric portion (2) to obtain a starting end of a pocket bag portion (4). Thereafter, the base knitted fabric portion (2) and the pocket bag portion (4) are knitted. Furthermore, tubular knitting is carried out using the front and back needle beds at a knitting width corresponding to the pocket bag portion in a region of the stitch row held on the front and back needle beds while forming the base knitted

fabric portion, a new stitch held on the front and back needle beds formed in the tubular knitting is transferred to form double stitches in the relevant region, and a new stitch serving as the base knitted fabric portion continuing to the pocket bag portion is formed on the double stitches. A secure two-layer knitted fabric can be formed by knitting a secure tubular base knitted fabric portion (7), so that a high quality pocket that is less likely to lose its shape and that has small a level difference is obtained.

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Description

BACKGROUND OF THE INVENTION

Field of the invention

[0001] The present invention relates to a knitted fabric with a pocket which is knitted using a flat knitting machine, and a method of knitting the same.

Description of Related Art

[0002] Conventionally, in knitwear such as a sweater or a cardigan, a pocket is sometimes added to a body portion thereof. The applicant of the present application discloses a method of integrally knitting a pocket knitted fabric by branching it from a base knitted fabric. Patent Document 1, for example, describes forming, in a seamless manner, a pocket that is heavy and that excels in shape holding property by forming an upper edge part of the pocket having a rib knitted structure at the upper position of the pocket bag portion, and Patent Document 2 describes reinforcing the upper part of the pocket by forming a rib knitted fabric and the like at the opening that is orthogonal to the knitted structure of the base part, and enhancing the design.

PRIOR ART DOCUMENTS

PATENT DOCUMENTS

[0003] Patent Document 1: Japanese Patent Publication No. 3406097

Patent Document 2: Japanese Unexamined Patent Publication No. 2002-339203

SUMMARY OF THE INVENTION

[0004] The shape of the opening of the pocket particularly tends to deform. Although a constant effect is obtained by carrying out reinforcement and the like in the pocket described in the above patent documents, a pocket that is less likely to lose its shape is desired. It is an object of the present invention to propose a knitted fabric with a, high quality pocket which is less likely to lose its shape, and a method of knitting the same.

[0005] There is provided a method of knitting a knitted fabric with a pocket knitted using a flat knitting machine having at least a pair of front and back needle beds in which a plurality of knitting needles are arranged side by side, and in which stitches are transferred between the needle beds, a bind-off process being performed on a stitch row at an end of a pocket bag portion formed by being branched from a base knitted fabric portion; the method including the step of forming a tubular base knitted fabric portion to become a two-layer with respect to a stitch row of the base knitted fabric portion at an upper position of the pocket bag portion after the bind-off process is completed.

ess is completed.

[0006] The step of forming the tubular base knitted fabric portion includes the steps of forming a widening stitch by split knitting on the other needle bed, performing tubular knitting using the front and back needle beds at a knitting width corresponding to the pocket bag portion in a region of the stitch row held on the front and back needle beds while forming the base knitted fabric portion, and forming double stitches in the region by transferring a new stitch held on the front and back needle beds formed in the tubular knitting.

[0007] The bind-off process includes a step 1 of forming a widening stitch by split knitting on the other needle bed with respect to stitches of a stitch row to be subjected to the bind-off process held on one needle bed, a step 2 of forming a new stitch by carrying out tubular knitting on the front and back needle beds, and a step 3 of transferring a new stitch held on the front and back needle beds formed in the tubular knitting to form double stitches to reduce the stitches; and the step 2 and the step 3 are repeated sequentially toward a termination side with the double stitches as a starting end.

[0008] There is provided a knitted fabric with a pocket in which a bind-off process is performed on a stitch row at an end of a pocket bag portion formed by being branched with respect to a base knitted fabric portion using a flat knitting machine having at least a pair of front and back needle beds in which a plurality of knitting needles are arranged side by side and in which stitches are transferred between the needle beds; wherein ravel prevention by the bind-off process in which a tubular structure is arranged at an end on an opening side of the pocket bag portion is carried out; the tubular structure is formed with respect to the base knitted fabric portion at an upper position of ravel prevention so as to lie along the opening; and a level difference is small between the tubular structure and an opening side end of a pocket.

[0009] In the present invention, according to the formation of the tubular base knitted fabric portion in which the secure tubular structure with less stretching is arranged with respect to the base knitted fabric at the upper position of the pocket opening, the base knitted fabric portion facing the pocket bag portion can be suppressed from stretching to the lower position, and a pocket which is less likely to lose its shape can be formed.

[0010] Furthermore, in the present invention, the level difference with the stitch at the termination of the pocket bag portion can be prevented from standing out by forming the tubular base knitted fabric portion with respect to the base knitted fabric portion.

[0011] In the present invention, the bind-off process knitting provides thickness to the knitted fabric by realizing a front and back two-layer state by carrying out tubular knitting. The double stitches are formed using a new stitch held on the front and back needle beds formed in the tubular knitting, whereby the termination of the secure pocket bag portion can be obtained.

[0012] The knitted fabric by the present invention is

subjected to the bind-off process in which the tubular structure with secure thickness is arranged at the termination of the pocket bag portion. A level difference due to the thickness of the tubular structure is formed with respect to the base knitted fabric, but such a level difference does not stand out according to the formation of the tubular base knitted fabric portion having thickness, and hence a knitted fabric with a pocket in which not only stretching is suppressed but also satisfactory appearance is realized can be obtained.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013]

Figs. 1A and 1B are schematic views of a knitted fabric with a pocket according to an embodiment of the present invention, where Fig. 1A is a schematic view of a knitted fabric seen from the front surface, and Fig. 1B is a view showing a cross-sectional structure of the knitted fabric seen from line Y-Y; Fig. 2 is a knitting diagram of a tubular bind-off portion of the knitted fabric with the pocket according to the embodiment of the present invention; Fig. 3 is a knitting diagram of the tubular bind-off portion according to the embodiment of the present invention following Fig. 2; Fig. 4 is a knitting diagram of a tubular base knitted fabric portion of the knitted fabric with a pocket according to the embodiment of the present invention; and Fig. 5 is a knitting diagram of the tubular base

knitted fabric portion of the knitted fabric with the pocket according to the embodiment of the present invention following Fig. 4.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0014] Hereinafter, a knitted fabric 1 with a pocket will be described as an embodiment of the present invention. In particular, knitting of a tubular base knitted fabric portion 7 (front side 7F, back side 7B), which is a feature of the present invention, will be mainly described. The flat knitting machine used for the knitting is a two-bed flat knitting machine having a pair of front and back needle beds, in which the back needle bed is capable of being racked with respect to the front needle bed and in which a plurality of yarn feeders are arranged above the needle beds. In the knitting diagram, the number of needles is less than that used in the actual knitting for the sake of convenience of the explanation.

[0015] In the knitting diagrams of Fig. 2 to Fig. 5, the numbers on the left side in the drawing indicate the knitting steps (S) and (T), the arrow in the lateral direction indicates a knitting direction, and the arrow in the vertical direction indicates a transferring direction. Furthermore, FB indicates the front needle bed and BB indicates the

back needle bed. The capital letters A to P indicate the knitting needles of the FB and the lower case letters a to p indicate the knitting needles of the BB. Black circles indicate stitches formed in the relevant knitting step, and double circles indicate double stitches. As to stitches (white circle) held on the knitting needles which do not participate in the knitting of the knitting step, the illustration thereof is omitted except for one part.

10 Embodiment

[0016] Figs. 1A and 1B are schematic views showing the knitted fabric 1 with a pocket. Fig. 1A is a schematic view of the knitted fabric 1 seen from the front surface. The region surrounded by a thick line indicates the region of the pocket usually found in the conventional technique. That is, a state in which the tubular base knitted fabric portion 7 is not present is shown. Fig. 1B is a view showing a cross-sectional structure of the knitted fabric seen from a chain double dashed line Y-Y. A base knitted fabric portion 2 knitted in the present embodiment is knitted in plain stitches. As shown in the figures, the widening stitches are formed by known split knitting at a pocket branched portion 3 to become the starting end of a pocket bag portion 4 with respect to the base knitted fabric portion 2 knitted in the direction of the arrow W. Thereafter, the base knitted fabric portion 2 and the pocket bag portion 4 are knitted (See S0 of Fig. 2 to be described later). The pocket bag portion 4 and the base knitted fabric portion 2 are combined to form a two-layered knitted fabric. In the present embodiment, the base knitted fabric portion 2 on the far side in the plane of drawing is also knitted in front stitches so as to have the same appearance as the stitches of the pocket bag portion 4 on the near side when seen from the pocket opening 6, thus enhancing the quality of the pocket.

[0017] The tubular bind-off portion 5 is branched at the stitch 10 to form the secure terminating part of the pocket of two layers. However, a level difference stands out by its secureness and thickness. Furthermore, if an article is placed in the pocket, the weight of the article is added and the pocket may further deform. In the present embodiment, the tubular base knitted fabric portion 7 is formed, and the deforming force thereof is weakened. Furthermore, the level difference created with the tubular bind-off portion 5 on the pocket opening 6 side does not stand out owing to the thickness of the knitted fabric portion by the formation of the tubular base knitted fabric portion 7, the pocket opening 6 does not widen, and satisfactory appearance is obtained.

[0018] Fig. 2 and Fig. 3 are knitting diagrams of the tubular bind-off portion 5 of the knitted fabric 1 with the pocket. The knitting steps S0 to S16 shown in Fig. 2 and Fig. 3 will be described below. In the tubular bind-off portion 5 knitted in the present embodiment, the bind-off process is carried out from the right side toward the left side in the plane of drawing. In the knitting width of the pocket bag portion 4, the knitting needles K, k are the

starting side, and the knitting needles E, e are the terminating side. After the pocket branched portion 3, the stitches are formed continuously in the state of the pocket bag portion 4 shown in S0 (cross-section of knitted fabric seen from chain double dashed line X-X of Fig. 1A).

[0019] In Fig. 2, S0 shows a state in which the stitches of the knitted pocket bag portion 4 and the stitches of the base knitted fabric portion 2 are held on the knitting needles A, C, E, G, I, K, M, O of the FB and the knitting needles f, h, j, l of the BB. A new stitch is formed in continuation to the stitches held on every other knitting needle from the knitting needle A of the FB. In S1, the stitches of the knitting needles K, I, G, E of the FB are moved to the knitting needles k, i, g, e of the BB by transfer, and new stitches are formed on the knitting needles O, M of the FB and the knitting needles k, i, g, e of the BB in the left direction. In S2, new stitches are formed on the knitting needles e, g, i, k of the BB with the direction changed to the right direction. After the knitting of the back stitches is completed, the stitches are transferred back to the knitting needles K, I, G, E of the FB.

[0020] In S3, new stitches are formed on the knitting needles K, I, G, E in the left direction. However, the stitch 10 serving as a widening stitch is formed on the knitting needles k, i, g, e of the BB opposing thereto by the split knitting with the knitting needles K, I, G, E. In S4, the stitches are formed on the knitting needles E, G, I, K of the FB in the right direction. In S5, the stitches are formed on the knitting needles K, I, G, E of the FB in the left direction. In S6, new stitches are formed on the knitting needle E of the FB and the knitting needles g, i, k of the BB in the right direction. At one part of the stitch 10 widened in S3, a new stitch 11 is formed to facilitate the knitting.

[0021] In S7 of Fig. 3, a stitch (stitch 20) is formed on the knitting needles K, G of the FB in the left direction. In S8, a stitch (stitch 21) is formed on the knitting needles g, i, k of the BB in the right direction. The tubular knitting is carried out in S7 and S8. Although the conditions differ depending on the thickness and the material of the yarn, a greater number of stitches formed in the tubular knitting are connected in the wale direction as the stitches increase, thus providing thickness and secureness. In S9, the stitch 21 to be held on the knitting needle l of the FB is transferred from the knitting needle k of the BB. Furthermore, in S10, the stitch 20 to be held on the knitting needle K of the FB is transferred to the knitting needle l of the FB through the knitting needle k of the BB, thus forming the double stitches of the stitches 20, 21.

[0022] In S11, a new stitch (stitch 22) is formed on the knitting needles l, E of the FB in the left direction. Subsequently, in S12, a new stitch (stitch 23) is formed on the knitting needles e, g, i of the BB in the right direction. In S13, the stitch 23 held on the knitting needle i of the BB is transferred to the knitting needle G of the FB. Furthermore, in S14, the stitch 22 held on the knitting needle l of the FB is transferred to the knitting needle G of the FB through the knitting needle i of the BB, thus forming

the double stitches of the stitches 22, 23. Subsequently thereto, knitting similar to S11 to S14 is repeatedly carried out, and the stitches of the knitting needles E, G, I, K of the FB are sequentially subjected to the bind-off process, so that the stitches of the knitting needles E, G, I, K of the FB are bound off and removed, as shown in S15. In S16, the stitches of the knitting needles f, h, j, l of the BB are transferred to the knitting needles E, G, I, K of the FB.

[0023] The tubular bind-off portion 5 is completed with respect to the stitch row at the end of the pocket bag portion 4, and the tubular base knitted fabric portion 7 is formed with respect to the stitches held on the knitting needles E, G, I, K of the T1, to be described later, in the form of sandwiching the pocket opening 6. Fig. 4 and Fig. 5 are knitting diagrams of the tubular base knitted fabric portion 7 of the knitted fabric 1 with a pocket. The knitting steps T1 to T13 shown in Fig. 4 and Fig. 5 will be described below.

[0024] In Fig. 4, T1 shows a state in which the stitches of the single layer base knitted fabric portion 2 are held on the knitting needles A, C, E, G, I, K, M, O of the FB after the tubular bind-off portion 5 is completed. At the stage of T1, the pocket bag portion 4 is also completed, and the tubular base knitted fabric portion 7 is formed in the base knitted fabric portion at an upper position than the relevant position. In T2, a new stitch is formed on the knitting needles O, M, K, I, G, E of the FB in the left direction. However, the split knitting is carried out with the knitting needles E, G, I, K, and the stitch 12 serving as a widening stitch is formed on the knitting needles e, g, i, k of the BB opposing thereto. Thereafter, the knitting is carried out in the two layer state using the branched stitches. The knitting width to be formed is preferably the same knitting width as or the knitting width wider by about a few stitches than the pocket bag portion 4 to achieve a good balance.

[0025] In T3, a new stitch 13 is formed on the knitting needles e, g, i, k of the BB in the right direction. In T4, a new stitch is formed on the knitting needles K, I, G, E, C, A of the FB in the left direction. In T5, a new stitch is formed on the knitting needles A, C of the FB, the knitting needles e, g, i, k of the BB and the knitting needles M, O of the FB in the right direction. Two back stitches of the stitch 13 of the back stitch in T3 and the stitch 14 of the back stitch in T5 are formed continuously following the stitch 12 of the knitting needles k, i, g, e of the BB widened in T2.

[0026] In T6, a new stitch is formed on the knitting needles O, M, K, I, G, E of the FB in the left direction. In T3 to T6, two stitches are formed additionally to stitches of the FB shown in T1 and the stitch 12 held on the knitting needles k, i, g, e of the BB widened in T2. In T7, the stitch 14 held on the knitting needles e, g, i, k of the BB is transferred to the knitting needles D, F, H, J of the FB, which are empty needles.

[0027] In T8 of Fig. 5, a new stitch 15 is formed on the knitting needles D, F, H, J of the FB in the right direction.

In T9, each of such stitches are then transferred to the knitting needles e, g, i, k of the BB. Thereafter, a new stitch is formed on the knitting needles K, I, G, E, C, A of the FB in the left direction. This knitting becomes the stitches on the tubular base knitted fabric portion front side 7F. The stitches of the tubular base knitted fabric portion front side 7F are knitted on the same needle bed as the stitches of the tubular base knitted fabric portion back side 7B formed on the needle bed of the BB in T5, so that the stitch 14 serving as the back stitch formed in T3, T5 seen from the FB side changes to the stitch 15 serving as the front stitch, where a purl structure appears at the relevant portion and the knitted fabric rises.

[0028] In T10, the stitches held on the knitting needles e, g, i, k of the BB are transferred to the knitting needles D, F, H, J of the FB, which are empty needles, and a new stitch is formed in the knitting course same as the knitting needles A, C, M, O of the FB in the right direction. In T11, the new stitch formed by carrying out transfer to the knitting needles D, F, H, J of the FB in T10 is transferred back to the knitting needles e, g, i, k of the BB. Furthermore, a new stitch is formed on the knitting needles O, M, K, I, G, E, C, A of the FB in the left direction. With respect to the length of the tubular base knitted fabric portion 7 in the wale direction, the number of stitches is to be adjusted by repeating the knitting from T6 to T10. In T12, the stitches held on the knitting needles e, g, i, k of the BB are transferred to the knitting needles E, G, I, K of the FB to form double stitches to complete the tubular base knitted fabric portion 7. In T13, a new stitch is formed on the knitting needles A, C, E, G, I, K, M, O of the FB in the right direction to complete the tubular base knitted fabric portion 7. A single layer knitted fabric serving as the base knitted fabric portion 2 is obtained.

[0029] The embodiment of the present invention is not limited to the embodiment described above, and can be appropriately modified within a scope not deviating from the gist of the invention. For example, other than the two-bed flat knitting machine, the knitting of the embodiment of the present invention can be carried out using a two-bed flat knitting machine equipped with a transfer jack bed or a four-bed flat knitting machine. In the embodiment, the description has been made for the plain stitch structure, but a purl structure or a rib structure may be formed in the base knitted fabric portion 2 or the tubular base knitted fabric portion front side 7F formed on the lower side of the tubular bind-off portion 5 or the upper position of the pocket opening 6, and the like.

Claims

1. A method of knitting a knitted fabric with a pocket knitted using a flat knitting machine having at least a pair of front and back needle beds in which a plurality of knitting needles are arranged side by side, and in which stitches are transferred between the needle beds, a bind-off process being performed on

a stitch row at an end of a pocket bag portion (4) formed by being branched from a base knitted fabric portion (2); the method **characterized by** comprising the step of:

forming a tubular base knitted fabric portion (7) to become a two-layer with respect to a stitch row of the base knitted fabric portion (2) at an upper position of the pocket bag portion (4) after the bind-off process is completed.

2. The method of knitting the knitted fabric with the pocket according to claim 1, **characterized in that** the step of forming the tubular base knitted fabric portion (7) includes the steps of forming a widening stitch by split knitting on the other needle bed, performing tubular knitting using the front and back needle beds at a knitting width corresponding to the pocket bag portion (4) in a region of the stitch row held on the front and back needle beds while forming the base knitted fabric portion (2), and forming double stitches in the region by transferring a new stitch held on the front and back needle beds formed in the tubular knitting.
3. The method of knitting the knitted fabric with the pocket according to claim 2, **characterized in that** the bind-off process includes a step 1 of forming a widening stitch by split knitting on the other needle bed with respect to stitches of a stitch row to be subjected to the bind-off process held on one needle bed, a step 2 of forming a new stitch by carrying out tubular knitting on the front and back needle beds, and a step 3 of transferring a new stitch held on the front and back needle beds formed in the tubular knitting to form double stitches to reduce the stitches; and the step 2 and the step 3 are repeated sequentially toward a termination side with the double stitches as a starting end.
4. A knitted fabric (1) with a pocket in which a bind-off process is performed on a stitch row at an end of a pocket bag portion (4) formed by being branched with respect to a base knitted fabric portion (2) using a flat knitting machine having at least a pair of front and back needle beds in which a plurality of knitting needles are arranged side by side and in which stitches are transferred between the needle beds; **characterized in that** ravel prevention by the bind-off process in which a tubular structure is arranged at an end on an opening side of the pocket bag portion (4) is carried out; the tubular structure is formed with respect to the base knitted fabric portion (2) at an upper position of the ravel prevention so as to lie along the opening; and

a level difference is small between the tubular structure and an opening side end of a pocket.

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Fig. 1

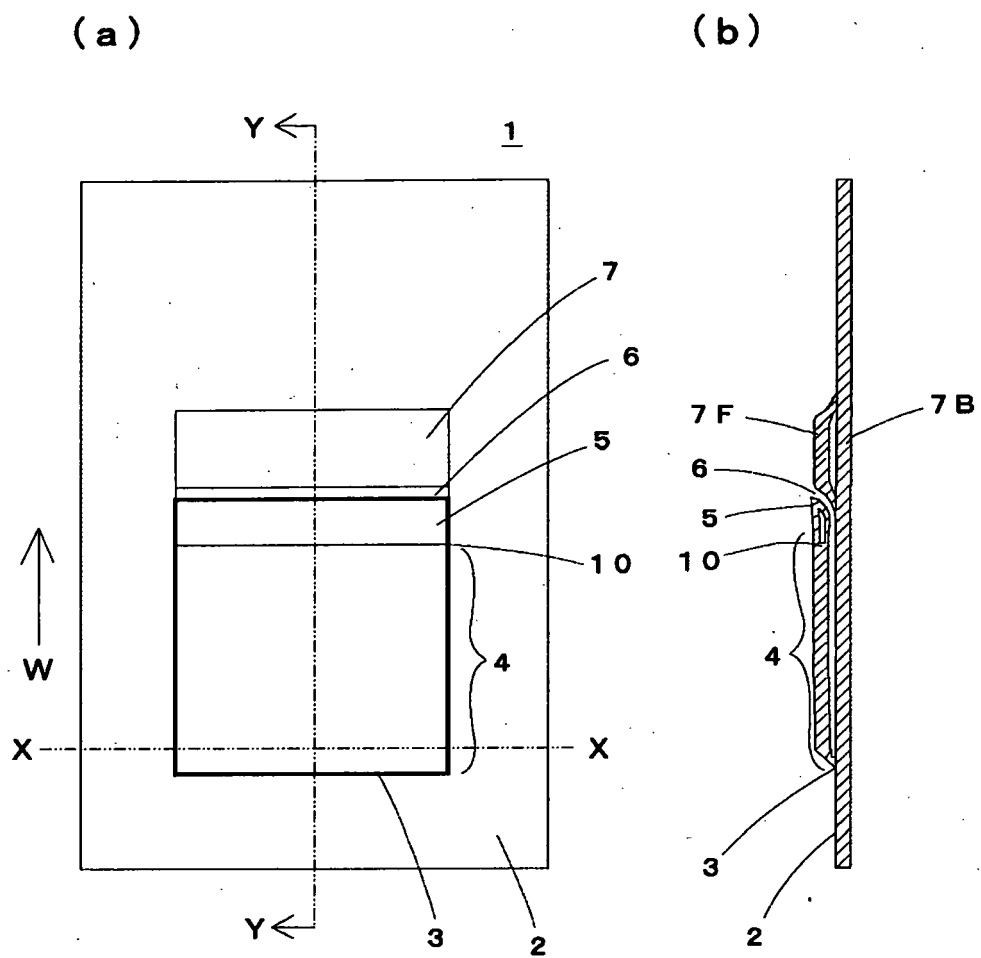


Fig. 2

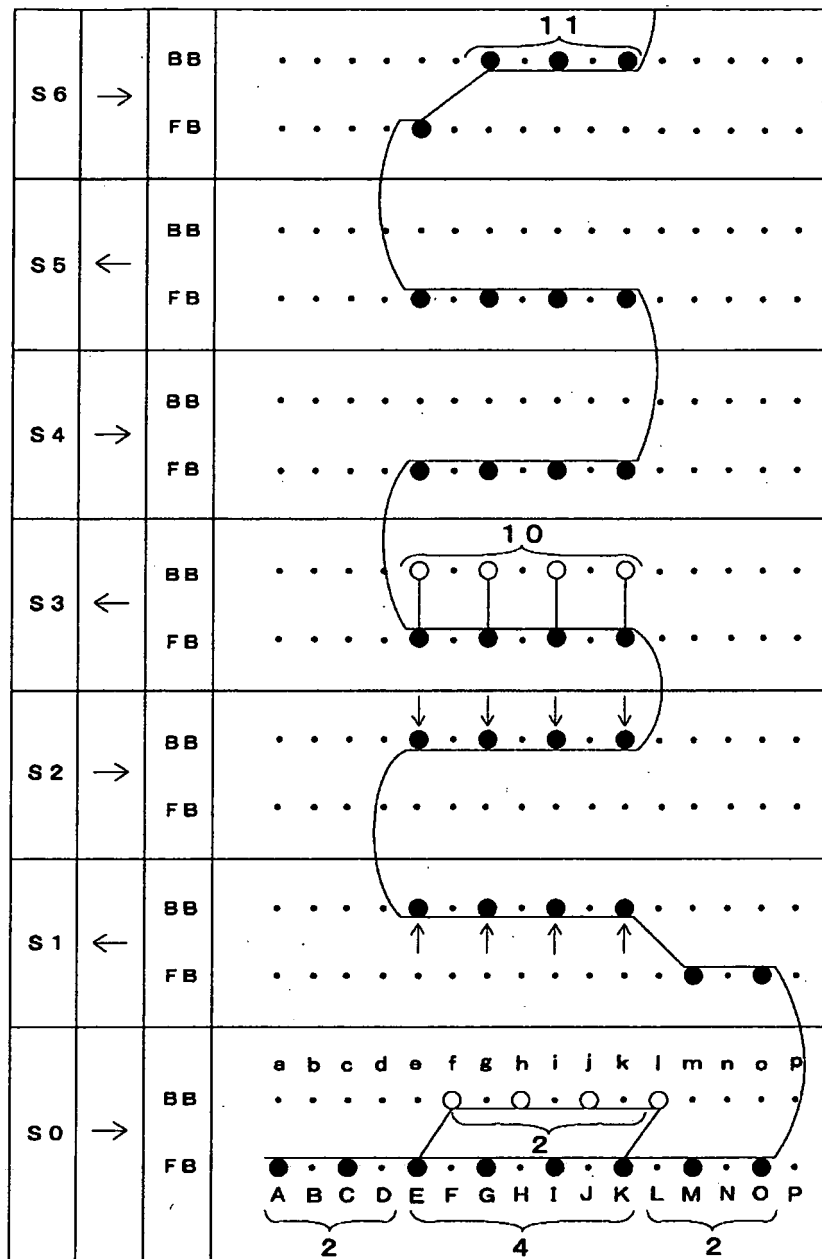


Fig. 3

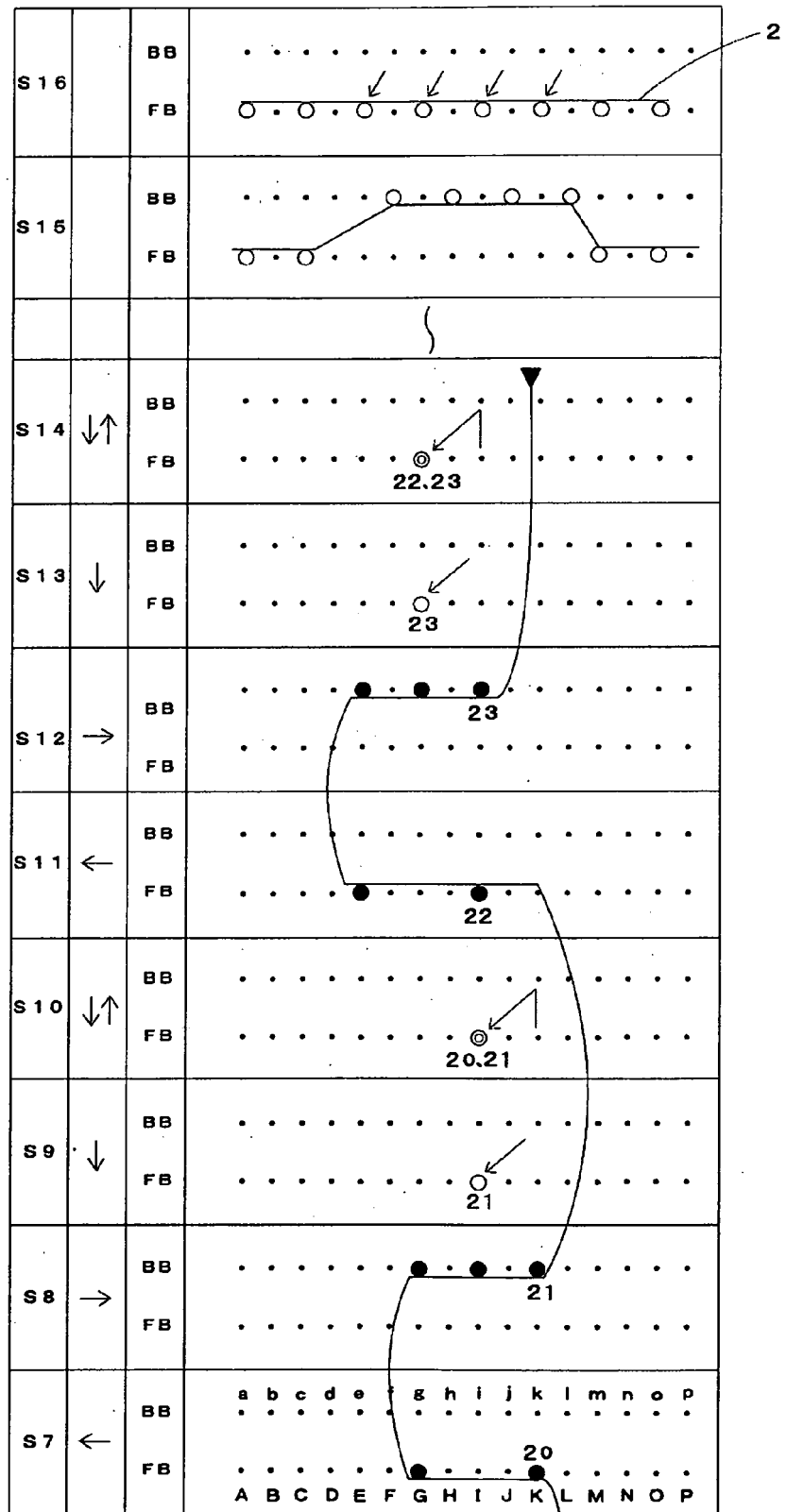


Fig. 4

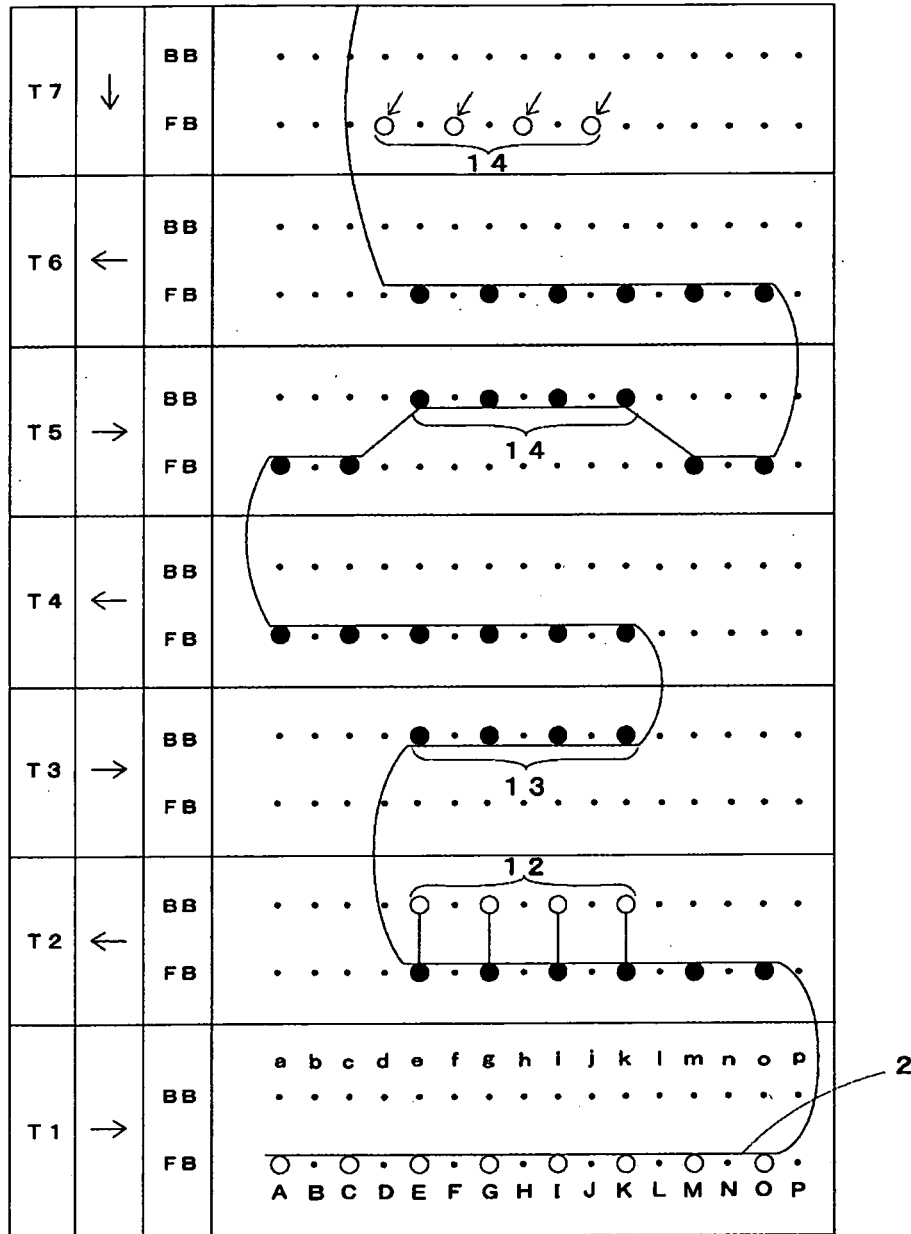
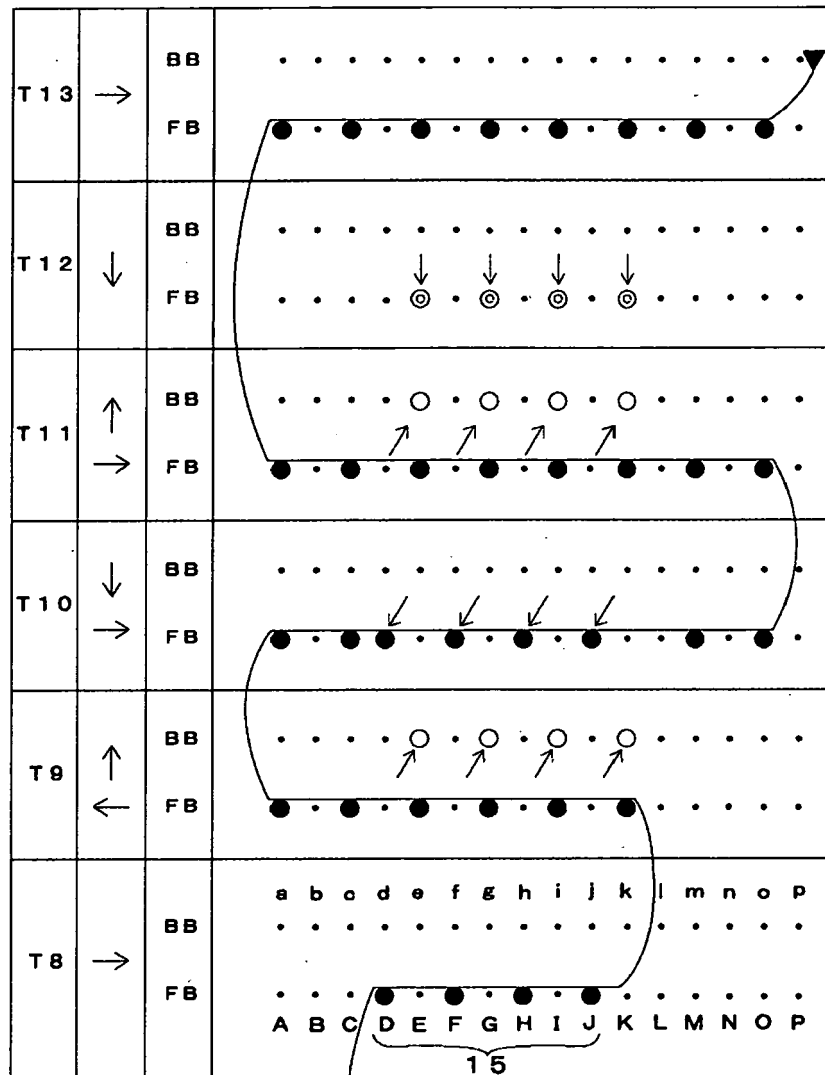


Fig. 5



REFERENCES CITED IN THE DESCRIPTION

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