June 30, 1953 J. G. SANDRI 2,643,532

METHOD OF PRODUCING FULL FASHIONED KNITTED ARTICLES

Filed Sept. 17, 1948

FIG. 1.

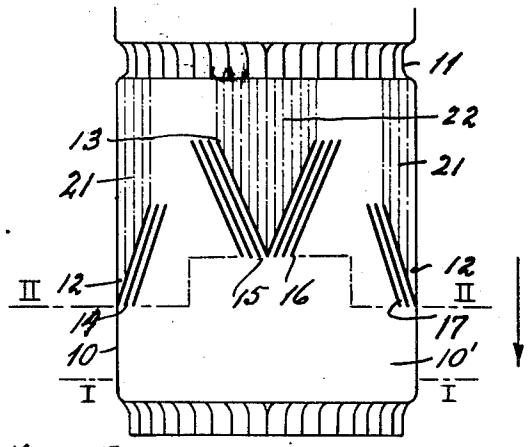


FIG. 8.

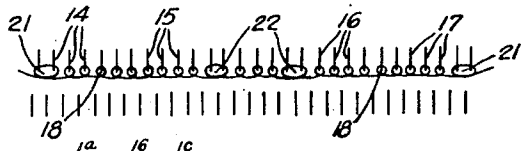


FIG. 2.

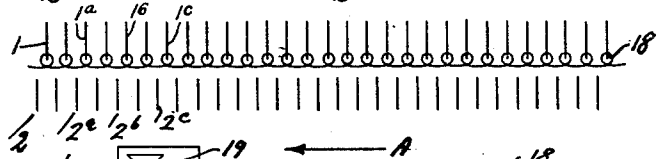


FIG. 3.

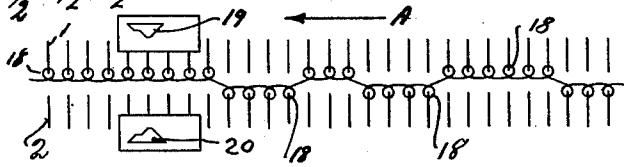


FIG. 4.

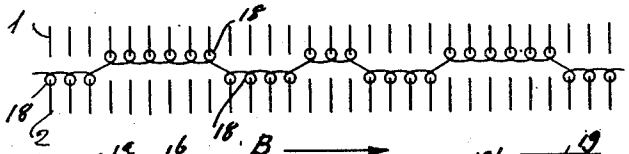


FIG. 5.

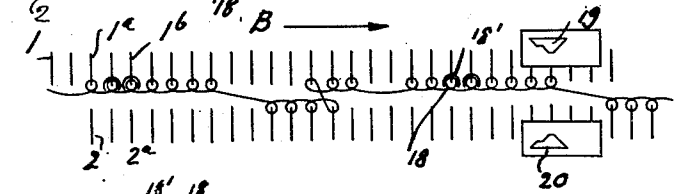


FIG. 7.

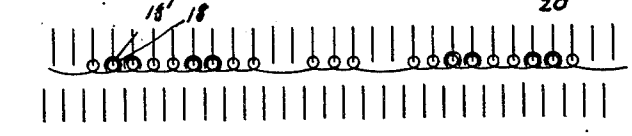
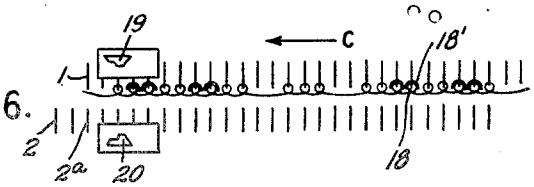


FIG. 6.



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METHOD OF PRODUCING FULL-FASHIONED KNITTED ARTICLES

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6 Claims. (Cl. 66—69)

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The present invention relates to a method of producing full fashioned knitted articles on flat bed knitting machines.

According to the practice most commonly hitherto used, manual intervention or special devices are required. Thus, for instance, with some methods the parts to be fashioned are either narrowed or widened, requiring partial interruption of knitting and subsequent resumption thereof over the entire width of the article to be produced. These operations are consequently slow and complicated.

According to other methods the knitted articles are cut from yardage, and subsequently sewn together. This renders the operations quite difficult and produces weak seams.

The principal object of this invention is to obviate these disadvantages by automatically producing a fashioned article on flat bed knitting machine through the well known stitch transferring operations.

This new method consists in forming selvage wales at the parts to be fashioned, while the knitting continues throughout the width and length of the article to be produced and subsequently, before sewing or finishing the article, cutting away the excess knitted fabric. The wales may be made oblique under any desired angle, location and number, according to the shape desired. Moreover, this method permits knitting of any type of stitch on either side of said wales, and is also applicable to simultaneous knitting of several articles.

As an example illustrating a typical shaping of a knitted article full fashioned by stitch transfer on a flat bed knitting machine according to my new method, I have chosen a sweater known as a pullover and have illustrated the same and the new method of producing it in the accompanying drawing, in which similar references denote corresponding parts:

Fig. 1 represents the pullover front produced by my new method;

Fig. 2 illustrates diagrammatically the plain stitches hung up in the needle hooks of one row on a cut taken along line I—I of Fig. 1;

Figs. 3–7, inc. illustrate diagrammatically the different, successive, necessary transfer operations on some of the needles as a cut taken along line II—II of Fig. 1, to produce the fashioned parts; and

Fig. 8 illustrates diagrammatically the resumption of knitting on the whole width.

The machine itself and the means for effecting the transfer of the stitches being well known

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in the art are not shown, except the two rows of needles on opposite sides of a flat knitting machine marked 1, 1*a*, 1*b*, 1*c* . . . and 2, 2*a*, 2*b*, 2*c* . . . the first named row being the rear needles, the second one the front needles. The needles are of the well known construction. 10 denotes the full fashioned pullover produced by my new method, having cuff portions 11, armholes, 12, 12 for the sleeves and a hole 13 for the neck. The cuffs and the usual plain stitches 10' of the fabric are knitted in the usual manner. For the shaping of the armholes 12, 12 and neck hole 13 I produce selvage wales 14, 15 and 16, 17 respectively through the well known transfer of the stitches as will be presently described.

As shown in Fig. 2 all loops 18 for plain knitting are in the hooks of the rear needles 1, 1*a* . . . with the front needle bed in its normal position, in which position all front needles are displaced relative to the rear needles.

Now, to form the selvage wales 14, 17 for the armholes 12, 12 and selvage wales 15, 16 for the neck, the front needle bed is racked to the right, so that all needles now are placed in alignment with one another, as shown in Fig. 3 and during the passage of the locks or cams 19, 20 in the direction of the arrow A to the end of their course (shown in Fig. 4) the loops 18 of the rear needles intended for the formation of the four selvage wales are transferred to the front needles. Then the front bed is again racked to the right, displacing its needles a distance of two needles relative to rear needles so that front needle 2 is in line with rear needle 1*a*, front needle 2*a* in line with rear needle 1*b*, etc. shown in Fig. 5, whereupon the cams 19, 20 are moved in the direction of arrow B and the two groups of loops for the formation of the wales 14, 16 and re-transferred onto the rear needles 18' which show the stitch transferred in the needle hook containing a stitch 18. Subsequently the front needle bed is racked to the left, displacing its needles a distance of 4 needles relative to the rear needles, so that the front needle 2*a* is opposite rear needle 1 shown in Fig. 6. The cams 19, 20 are again moved in the direction of the arrow C and the two groups of loops for the formation of the wales 15, 17 are retransferred to the rear needles. After the loops for knitting the four groups of selvage wales are all retransferred to the rear needles (Fig. 7) the knitting is continued on the whole width of the fabric by all rear needles, and the selvage wales are repeated according to the desired shape until the entire article is obtained.

As the knitting proceeds on either side of each wale, on the entire width of the fabric, the groups of loops transferred for producing said wales stop the run of stitches. Thus the stitches of the oblique wales are strictly regular whilst they simplify the cutting and sewing or finishing of the garment. The groups of chains of oblique wales are bordered on one side by fabric in the usual plain stitches 10' and on the other side by series of stitches alternating with wide loops 21, 22. The latter are built by the needles whose stitches have been transferred.

The wide loops 21 at the outer edges of the wales 14, 17 and wide loops 22 on the inside between the wales 15, 16 are subsequently cut away before sewing or finishing.

For using this method the usual set of yarn carriers is required.

It is obvious that my new method may be used for producing fully fashioned knitted articles of any shape by forming wales of any design at the parts to be fashioned through transfer of stitches.

What I claim is:

1. A method of manufacturing a fashioned knitted piece such as a pullover comprising the steps of knitting groups of oblique wales serving to define the neck portion of the pullover, of knitting usual plain stitches on one side of each group of oblique wales, of knitting wide stitches alternating with sinker stitches on the other side of each group of oblique wales and of cutting off the said wide stitches and said sinker stitches before finishing said pullover.

2. A method of manufacturing a fashioned knitted piece such as a pullover comprising the steps of knitting groups of oblique wales serving to define the armholes of the pullover, of knitting usual plain stitches at one side of each group of oblique wales, of knitting wide stitches alternating with sinker stitches at the other side of each group of oblique wales and of cutting off said wide stitches and sinker stitches before finishing said pullover.

3. A method of manufacturing a fashioned knitted piece such as a pullover comprising the steps of knitting groups of oblique wales serving to define the armholes and neck portion of a pullover, of knitting usual plain stitches at one side of each group of oblique wales, of knitting wide stitches alternating with sinker stitches at the other side of each group of oblique wales, and of cutting off said wide stitches and sinker stitches before finishing said pullover.

4. A method of knitting a fashioned piece such as a pullover having oblique wales at selected locations in a flat bed knitting machine having a pair of relatively movable needle beds each bearing needles with hooks and having stitch loop transferring means for transferring stitch loops from needle hooks of needles of a first bed of said pair of beds to needle hooks of needles of a second bed of said pair of beds comprising the steps of arranging stitch loops in hooks of needles

of the first bed of needles to the full width of the fashioned piece to be knitted, aligning needles of the two beds, transferring selected wale forming groups of stitch loops from hooks of needles of the first bed to hooks of aligned needles of the second bed, moving the second bed in a given direction a selected number of needles relative to the first bed, retransferring chosen of said selected wale forming groups of stitch loops from hooks of needles on the second bed to hooks of needles of the first bed then aligned therewith, moving said second bed oppositely to said given direction a selected number of needles relative to the first bed, retransferring any remaining of said selected wale forming groups of stitch loops on hooks of needles on said second needle bed to hooks of needles on said first needle bed then aligned therewith, then knitting by all of the needles of said first bed the full width of said fashioned piece, and repeating said steps in successive courses to completion of said oblique wales of said fashioned piece.

5. A method of knitting a fashioned piece such as a pullover having oblique wales defining armholes and neck thereof in a flat bed knitting machine having relatively movable front and rear needle beds bearing needles with hooks and having stitch transfer means for transferring stitch loops from needle hooks of one bed to needles of the other bed comprising the steps of arranging stitch loops in hooks of the rear needles to the full width of the fashioned piece, aligning needles of the front and rear beds, transferring selected wale forming groups of stitch loops from rear bed needle hooks to corresponding aligned front bed needle hooks, moving to front bed needles in a given direction a distance of two needles relative to the rear bed needles, retransferring a pair of said selected wale forming groups of stitch loops from front bed needle hooks to rear bed needle hooks then alined therewith, moving said front needle bed oppositely to said given direction a distance of four needles relative to said rear needle bed, retransferring remaining groups of said selected wale forming stitch loops on front bed needle hooks to rear bed needle hooks then aligned therewith, then knitting by all rear needles the full width of said piece, and repeating said steps in successive courses to completion of formation of said oblique wales of said pullover.

6. The method of knitting of claim 4 including the step of cutting off portions of the knitted piece adjacent one side of each of the oblique wales prior to finishing of said fashioned piece.

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