



METHOD FOR PRODUCING DOUBLE-LAYER WEFT KNITTING FABRIC

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ABSTRACT

One of the indicators of the quality of knitwear for top products is its shape stability. In the article, the structure and method for producing a new type of double-layer weft knitting fabrics, where the form stability of knitting fabrics is achieved by including the weft yarn in its structure, are developed with the aim of increasing the shape stability of knitwear.

KEY WORDS: *quality, structure, products, knitting fabric, double-layer, weft, form stability.*

АННОТАЦИЯ: Одним из показателей качества трикотажа для топовых изделий является стабильность его формы. В статье разрабатываются структура и способ производства нового типа двухслойных уточных трикотажных тканей, в которых стабильность формы трикотажных тканей достигается путем включения в ее состав уточной пряжи, с целью повышения стабильности формы. трикотажные изделия.

КЛЮЧЕВЫЕ СЛОВА: качество, структура, изделия, трикотажное полотно, двухслойная утка, стабильность формы.

I.INTRODUCTION

In order to increase the knitwear's form-stability, we developed a structure and method for producing a new type of two-layer weft knitwear, where the knitwear's form-stability is achieved by including a weft thread in its structure. On the basis of a two-layer knitwear, where a press method of joining with warp threads is used to connect the layers of knitwear, 3 versions of a two-layer weft knitwear have been developed and developed.

The proposed options for a two-layer weft knitwear differ from each other in a weave structure. The first version of a two-layer weft knitwear is obtained on the basis of weaving fangs.

Fang is called press weaving, consisting of single press loops with single-needle drafts. Fang has the same structure on the front and wrong sides [1].

On both sides of the fang, like the 1 + 1 eraser, the front and back loop stitches alternate through one. A feature of the appearance of the fungus is that its facial looped posts do not touch each other. This is explained by the fact that in his sketches striving for straightening, elastic forces arise, pushing adjacent looped posts. Therefore, the knit weave of the fangs is much wider than the knit weave of the eraser and, when removed from the machine, has a smaller percentage of shrinkage in width.

The fang is produced on double-loop knitting machines under the following conditions: if loops are formed on the needles of one needle bed, then drafts



are produced on the needles of the other at that time and vice versa, if drafts are formed on the needles of one needle needle, then loops are formed on the needles of the other. With such a convoy, during the development of the fungus, the formation of sketches and the release of press loops occurs on the front and rear needle beds alternately.

The hinged posts on one side of the knitwear are offset relative to the posts on the other by 0.5 B. The thickness of the fungus, due to the presence of sketches on all loops, is increased: $Mf \geq 6d$ [2]. To obtain one loop series of fungus, two looping cycles, or a set of two looping systems for the fungus based on the eraser, are required. The loops of one side of the fungus are connected to the loops of the other by outline, which are located inside the knitwear and are almost invisible on each side of it. Therefore, on the basis of double fungus, knitwear can easily be obtained, each side of which is made of threads of various kinds or colors, for example, one side is made of woolen and the other is made of cotton yarn.

This feature is used to save expensive raw materials by knitting loops backstitches from cheaper raw materials in the manufacture of the top products

and to improve the hygienic properties of articles made of synthetic backstitches by knitting loops from a natural feedstock.

Fang can be developed in ways without switching and without culling.

On a flat-wing machine, a fang is obtained without a method by means of a specific installation of culinary wedges. When installing the locks on the fungus, the needles of the front and rear needle beds are alternately lowered to an incomplete depth to form drafts on them [3].

The disadvantage of a two-layer knitwear developed on the basis of weaving of fangs is a large elongation in width and less dimensional stability.

II. DEVELOPMENT OF DOUBLE-LAYER WEFT FABRICS

In order to expand the range of knitted fabrics and increase dimensional stability, a weft thread is introduced into the structure of a two-layer knitwear developed on the basis of weaving of fangs.

The structure and graphic record of a two-layer weft knitwear is shown in Fig. 1.

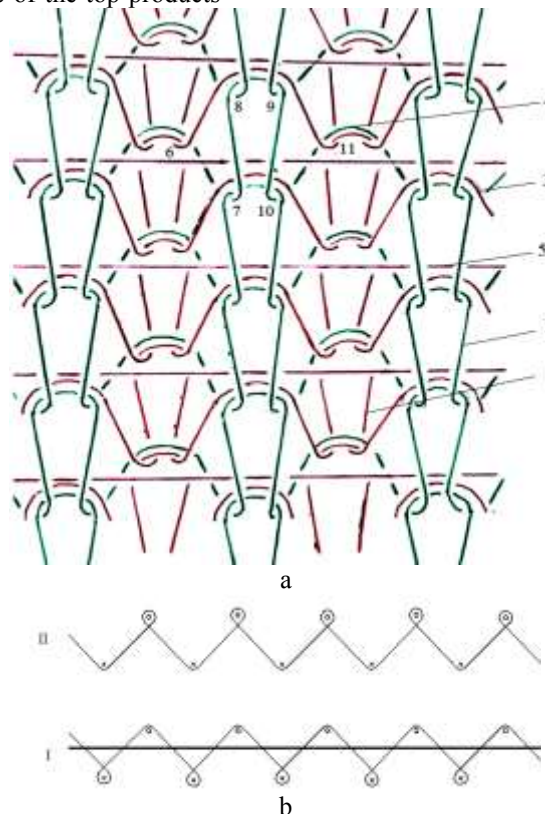


Fig. 1. The structure and graphic recording of the production of a two-layer weft knitwear based on fang weaving

The knitwear (Fig. 1, a) consists of elongated purl 1, front loops 2, drafts 3 of one layer and a sketch 4 of another layer of knit. An additional weft thread 5 is located along the loop series between the

loops of the rear and front needle bars and the press drafts.

In the formation of one rapport of the proposed two-layer weft knitwear on a flat-wing machine, two loop-forming systems are involved.

Two-layer weft knitwear on a flat-wing machine of the LongXing type LXA252SC is obtained as follows. When the carriage moves from

left to right, the first system knits the press row, for this, in the loop-forming system of the front needle bar, the upper closing wedge is turned off and the lower closing wedge is turned on completely. As a result of this, all the needles of the front needle bar rise to an incomplete conclusion, grab the thread, but the old loops are not reset, they form press drafts. The needles of the rear needle bar rise to full conclusion and form closed loops, for this the upper and lower enclosing wedges are fully included. In this system, using the second yarn guide, an additional weft thread is laid on the press drafts between the needles of the needle beds (Fig. 1, b). When the loop-forming system moves from right to left, press sketches are formed by the needles of the rear needle bar, and the needles of the front needle bar knit closed loops (II-loop row).

Located between the loops and drafts, the additional weft thread is firmly fixed to the sections

of the soil thread 6-7-8 and 9-10-11, which increases the contact points of the weft thread with soil loops and press drafts.

The presence of press drafts in the structure of the knitwear provides a strong fixation of the weft thread.

The resulting knitwear has a high dimensional stability. The presence of additional weft yarns in the structure of the knitwear reduces the stretchability of the knitwear in width, and press drafts and elongated loops contribute to a decrease in the stretchability of the knitwear in length.

The II-variant of a two-layer weft knitwear is also obtained on the basis of weaving of fangs, in contrast to the I-variant, a weft yarn is laid in each loop of a knitwear.

The structure and graphical representation of a two-layer weft knitwear obtained on the basis of fang weaving is shown in Fig. 2.

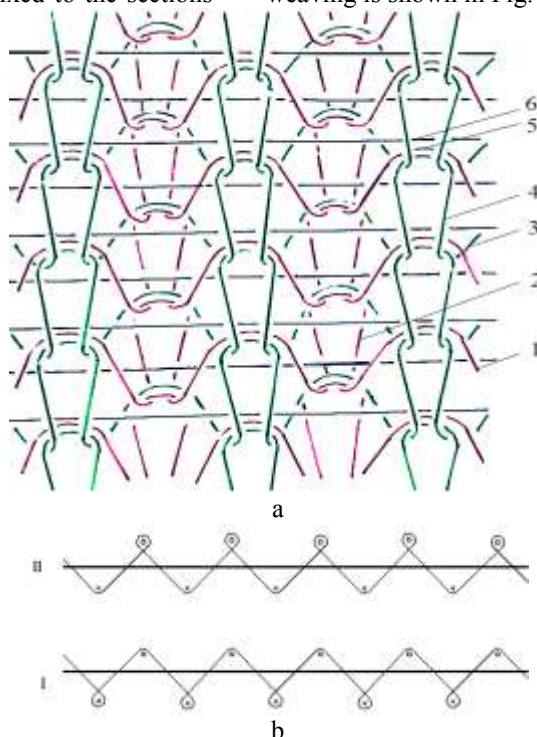


Fig. 2. The structure and graphic recording of the production of a two-layer weft knitwear.

In a two-layer weft knitwear from the yarn 1, knit rows of loops 2 from one layer of knitwear are knitted, and from the yarn 3, knit rows from loops 4 of another layer of knitwear. The layers of knitwear are connected using drafts 5. The weft thread 6 is laid on top of the press drafts (Fig. 2, a).

A two-layer weft knitwear on a flat-wing machine is obtained as follows. When the loop-forming system moves, the press row is knitted from left to right, the press drafts are formed by the needles of the front needle bar, and the needles of the rear needle bar knit closed loops.

In this looper row, using the second thread guide, a weft thread is laid on the press drafts

between the needle beds and needles (Fig. 2, b). In the second row of knitwear, the press row is knitted, the press drafts are formed by the needles of the rear needle bar, and the needles of the front needle bar knit closed loops.

In this row, with the help of an additional yarn guide, a weft thread is laid.

The third version of a two-layer weft knitwear is obtained on the basis of a combined weave. In this knitwear, press stitch rows alternate with stitch rows of smoothness.

The structure and graphic recording of a two-layer weft knitwear based on combined weaving is shown in Fig. 3.

From the structure of the weave it is seen that from the yarn 1, knit rows of loops 2 of one layer of knitwear are knitted and from the yarn 3 of knit rows of loops 4 of another layer of knitwear.

From the yarn 5, knit rows of ironing from the loops 6, on one side of the knit, and from the yarn 7 from the loops 8, knit rows of iron on the other side of the knit. The connection of the layers of knitwear is carried out using press sketches 9. The weft thread 10 is laid on top of the press sketches 9 (Fig. 3, a).

The proposed knitwear on a flat-wing machine is obtained as follows (Fig. 3, b).

When the loop-forming system moves from left to right, a press row is knitted with a weft thread, as in the second version of a two-layer weft knit.

In the second row, the needles of the front needle bar knit looped rows of smoothness. In the third row of knitwear, press loops with a weft thread are formed, as in the second version of a two-layer weft knit.

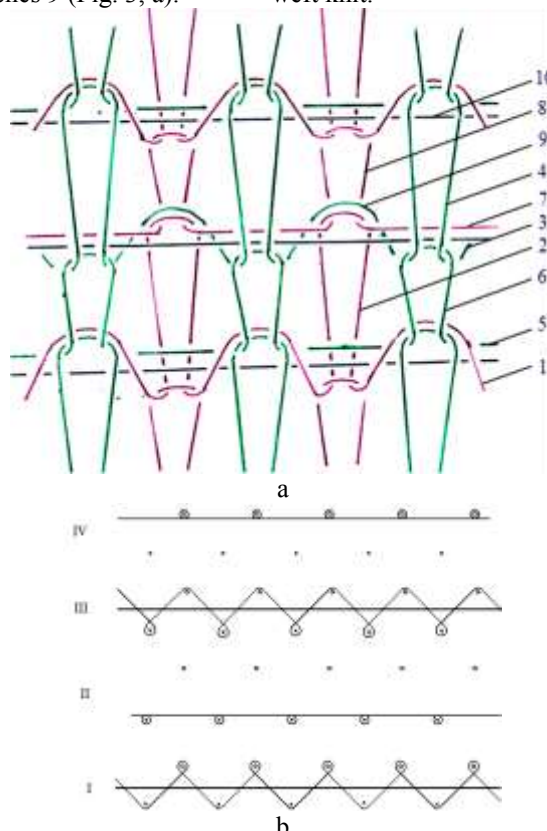


Fig. 3. The structure and graphic record of the production of a two-layer weft knitwear based on combined weaving

In the fourth stitch row, the needles of the rear needle bar knit stitch rows of smoothness.

Two-layer knitwear, in which the layers are connected by press drafts, is effective, since this knitwear does not require any additional devices or changes in the design of the machine. As a result, two layers are formed in the resulting two-layer knitwear, which differ in the kind of fiber, while the loops of the front layer do not extend to the back layer, and the loops of the back layer do not protrude to the front side.

III. EXPERIMENTS AND DISCUSSION

Using yarns of natural silk as one thread and for another layer of cotton yarn that meets the purpose of the resulting knitwear, it is possible to develop a two-layer knitwear of good quality with

good hygienic properties and minimal material costs, while practically not reducing the performance of the machine due to the simplicity of the proposed knitwear without changing the design of the flat-wing machine and only more fully using its technological capabilities.

Located between the loops and drafts, the additional weft thread is firmly fixed to the sections of the soil thread 6-7-8 and 9-10-11, which increases the contact points of the weft thread with soil loops and press drafts (Fig. 1).

The presence of press drafts in the structure of the knitwear provides a strong fixation of the weft thread.



IV. FINALY COMPARISON ANALYS AND CONCLUTION

The resulting knitwear has a high dimensional stability. The presence of additional weft yarns in the structure of the knitwear reduces the stretchability of the knitwear in width, and press drafts and elongated loops contribute to a decrease in the stretchability of the knitwear in length.

The proposed options for a two-layer weft knitwear can be successfully used in the development of knitwear and children's assortment.

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