DEVELOPMENT OF MANUFACTURING SEWING PRODUCTS BY MEANS OF WIDE REPLACEMENT OF A LOCKSTITCH ON DOUBLE THREAD CHAIN STITCH

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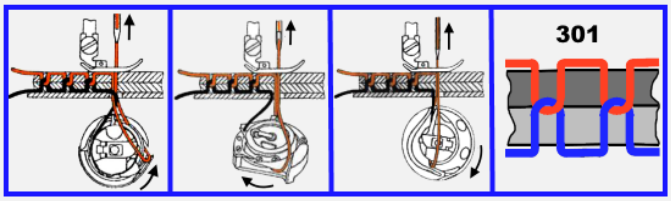
As know, the single line thread seams are widely used for making various sewing products and, currently, for the join materials by means of single line thread seams is mainly used the lockstitch type 301 and double thread chain stitch of type 401.

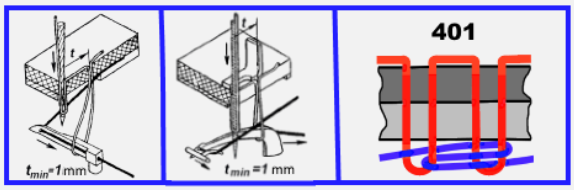
However, currently used the technologies obtaining of lockstitch and the existing technologies obtaining of double thread chain stitch, which was invented in the 19th century, have a lot of problems that cannot be eliminated, as they are related to technology of formation of stitches.

The problems of technologies for obtaining lockstitch type 301:



1. Frequent refilling of the bobbin of the hook with the bottom thread, which reduces productivity of sewing.
2. The complexity of the design of all types of hooks and their relative high cost.
3. It is necessary lubricate of hook, oil-free hooks limit the speed of the sewing machine to 4000 stitches/min.
4. It is necessary to clean the hook from mud and, in the case of contact of the threads in the hook that may occur jamming of the hook and the sudden stop of the sewing machine.
5. It is necessary to adjust the tension on the threads when changing the thickness and rigidity of the sewing material.
6. It is necessary to adjust the hook relative to the needle at transition to other numbers of needle in the range from Nm.130/21 to Nm.60/8, as the maximum allowable clearance between point of hook and needle is 0,1 mm.
7. It is impossible to make a universal sewing machine, as a sewing machine with a small needle stroke, for example 32 mm, is not able to sew heavy materials with thickness up to 8 mm.
8. It is impossible to guarantee on 100 % sewing without skipping stitch, without breakage of threads and without needle breakage.
9. The thread take-up is forced to tighten the top thread is not evenly.
10. The lockstitch seam is a little elastic and therefore, is not suitable for the join of elastic materials.

The problems of existing technologies for obtaining double thread chain stitch type 401:



1. It is impossible to tighten strongly a loop of the top thread in a stitch, because of it:
   - It is impossible to dense join of materials with the help double thread chain stitch;
   - The lower side of a chain seam turns out thicker.
2. The looper mechanisms have a complex structure.
3. The needle takes part in the preliminary tightening of the loop of the top thread in the previous stitch, because of it:
   - Used the needle with two long grooves to reduce the resistance material on the top thread;
   - It is impossible to reduce the resistance of the material on the top thread in previous puncture needle.
4. It is necessary to adjust the looper relative to the needle at transition to other numbers of needle in the range from Nm.130/21 to Nm.60/8, as the maximum allowable clearance between point of looper and needle is 0,1 mm.
5. It is impossible to make a universal sewing machine, as a sewing machine with a small needle stroke, for example 32 mm, is not able to sew heavy materials with thickness up to 8 mm.
6. It is impossible to guarantee on 100 % sewing without skipping stitch, without breakage of threads and without needle breakage.
7. Must use guards of needle to increase the stability of the stitch formation.
8. The degree of tightening threads in the stitch changes with change the thickness and rigidity of the sewing material.
9. Minimum stitch length is limited and it is impossible to reduce the stitch length to 0,5 mm and obtaining stitch when the stitch length of 0 mm.

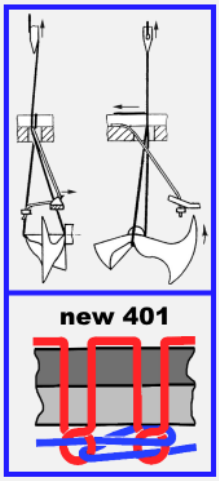
As know, currently, in the manufacture of various sewing products for the tight join of materials is used only the lockstitch type 301. This can be explained by the fact that, currently, only the lockstitch technology capable of tightly joining different materials with a lockstitch of type 301.

It is also known that the replacement of a lockstitch of type 301 on a double thread chain stitch of type 401 not only increases productivity due to the lack of frequent refilling of the bottom thread, but the strength of the seam (see a scientific article «Seam properties of Workwear»: http://ptj.com.pk/Web-2015/01-2015/PDF-January-2015/Apparel-and-Knitwear-Haifa.pdf).

However, the existing double thread chain stitch technology is not able to dense join different materials by using double thread chain stitch type 401, which does not allow replacing the lockstitch type 301 on a double thread chain stitch of type 401 on a larger scale in the manufacture of various sewing products.

We invented a new «ZARIF» double thread chain stitch technology, which is capable of dense and very dense join the textile, leather and plastic materials, and material combinations with the new double thread chain stitch type 401, where the loop of the top thread and loop the bottom thread is rotated by 180 degrees.

Also, our new «ZARIF» double thread chain stitch technology allows sewing without skip stitch with a 100% guarantee, which is very important, as all chain seams are easily to unravel from a place of the skip of a stitch.



On the basis of our new «ZARIF» sewing technology, we have produced the world's first universal «ZARIF» double thread chain stitch sewing machine, which is capable of sewing various materials with thickness up to 8 mm when the needle bar stroke of 32 mm without adjustment of a tension of threads (**please watch our full VIDEO paid only 1$ in our Website:** WWW.ZARIF.UZ).

Now, all interior seams where you want a dense join of different materials in the manufacture of sewing products such as jackets, coats, car seats, child car seats, seats for airplanes, sofas, armchairs, etc. can be done using our new double thread chain stitch type 401, instead of a lockstitch type 301.

Currently we are looking for partners and investors for the production of our industrial version of the world's first universal digital double thread chain stitch sewing machine, in bark, there will be no adjustment mechanisms and working units when change the thickness and rigidity of the sewing material, as well as upon transition to other numbers of needles ranging from needles Nm.130/21 to Nm.60/8.

More information about our new «ZARIF» sewing technology in our Website: WWW.ZARIF.UZ