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**REVIVAL OF TECHNOLOGIES AND
TRADITIONS OF MANUFACTURING SLUTSK
BELTS AND DEVELOPMENT OF PRODUCTION
OF NATIONAL SOUVENIR PRODUCTS**
**ВОЗРОЖДЕНИЕ ТЕХНОЛОГИЙ И ТРАДИЦИЙ
ИЗГОТОВЛЕНИЯ СЛУЦКИХ ПОЯСОВ И
РАЗВИТИЯ ПРОИЗВОДСТВА НАЦИОНАЛЬНОЙ
СУВЕНИРНОЙ ПРОДУКЦИИ**

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Key words: *Slutsk belts, weaving, jacquard machine, technical drawing, souvenirs, national brand.*

Ключевые слова: *слуцкие пояса, ткачество, жаккардовая машина, технический рисунок, сувениры, национальный бренд.*

Abstract. *The main subject of this research is the development of authentic Slutsk belts, piece products based on the artistic concept of authentic Slutsk belts, as well as technological developments related to the reconstruction of historical Slutsk belts on modern weaving equipment of RUE “Slutsk Belts”. The developed products are aimed at creating Belarusian national cultural brand and reconstructing the historical Slutsk belts.*

Аннотация. *Основным предметом этого исследования является развитие аутентичных слуцких поясов, штучных изделий, основанных на художественной концепции аутентичных Слуцких поясов, а также технологических разработок, связанных с реконструкцией исторических слуцких поясов на современном ткацком оборудовании РУП «Слуцкие пояса». Разработанные изделия направлены на создание белорусского национального культурного бренда и реконструкцию исторических слуцких поясов.*

The President of the Republic of Belarus A.G. Lukashenko set the task of reviving a unique phenomenon of Belarusian folk art – the Slutsk belts in his Appeal to the Belarusian People and the Parliament of the Republic of Belarus.

Slutsk belts are recognized throughout the world as the national relic of the Belarusian people as a unique kind of hand weaving and a symbol of self-determination of the nation. Technologies for creating belts have been lost to date. However, the loss of the original should not interfere with defending historical symbol. The Slutsk belt can become a symbol of the whole country along with other national sights.

Vitebsk State Technological University was designated as a realizer for studying and developing the technology for manufacturing analogues of the Slutsk belts and studying and selecting raw materials and technological equipment for their production in accordance with the protocol of instructions of the President Administration of the Republic of Belarus.

The problem proposed for development has not been solved either in Belarus or in other countries. Weaving technologies used in the manufacture of belts required detailed scientific research. It was not a question of restoring authentic Slutsk belts, but of reconstructing and making copies on modern weaving equipment.

The first reconstructed Slutsk belt was the complete replica of the original historical masterpiece and was presented to President of Belarus and kept in the Palace of Independence.

Replicas of historical belts contain natural silk, threads with gold and silver or izamet. There are no analogues of these products in the world.

In 2015-2017 researchers developed and improved technology of manufacturing of Slutsk belts of more complex structures and drawings, designing and manufacturing of souvenir production of various kinds. The aim of the presented scientific work is the revival of the phenomenon of Belarusian identity and the continuation of the traditions of the production of Slutsk belts.

The work includes the following sections:

- development of technical specifications for the construction of the loom;
- justification of the choice of weaving equipment for the development of Slutsk belts;
- analysis of the raw material of historical belts, selection of raw materials for the warp and weft;
- analysis of different types of structure and drawings of historical samples of Slutsk belts, their reconstruction, the development of weaves for all color effects of the drawings of Slutsk belts;
- development of technological parameters and their manufacture on modern weaving equipment with use of information technologies;
- design and development of an assortment of analog copies, artistic stylizations of Slutsk belts, souvenir products.

A technical task for technological equipment for the production of analogues of Slutsk belts was developed. Technological equipment for the development of Slutsk belts was produced at MAGEBA (Germany).

The German company EAT has developed the software for controlling the operation of the loom. The technology which includes raw materials, parameters of

the loom, density of warp and weft, programming of the work of platinum jacquard machines, programming of the work of shuttles was developed at the VSTU, as well as the structure of the belt including weaves, which in only one belt can be more than one hundred are translated into algorithms that control the work of the loom.

The technology of making authentic belts on modern weaving equipment has been developed. Slutsk belts in their structure are weft tapestries. The structure of the weft tapestry allows to reproduce a rather thin pattern and rich coloristic design.

A characteristic feature of weft tapestry fabrics is that all the color effects on the outer sides of the fabric are formed exclusively by the weft threads. Therefore, the number of color effects depends on the construction of the multi-color weaving loom device.

Six-shuttles weaving device provides six clean color effects on the belt surface. Another color effects were achieved by developing model weaves so that it was possible to obtain a mixed color effect. The increase of the number of color effects was based on the programming level of the shuttle operation, which provided the change of the bobbins with different colors of threads in the shuttles during the automatic stopping of the loom.

At certain parts of the belt some shuttles were switched off, the part made a double stroke, pulling behind the unearned weft. It is necessary for ease the structure of the belt. The location of the bobbins with a certain color of weft in shuttle is calculated in such a way that the weft making a return move do not cross each other. The earning of gold threads in the middle layer without its presence on the front or back of the belt is excluded. It excludes costs of an expensive gold thread.

Scientific research on the reconstruction of historical belts formed the basis and found further development in the development of prototypes of souvenir products. This piece products include panels, bookmarks, mouse pads, scarves. The developed products are aimed for creating the Belarusian national cultural brand, a symbol that can be replicated in various variations, in parallel with the revival of analogues of authentic Slutsk belts, developing an assortment of souvenirs.

The work with tradition is very responsible. It dictates rigid restrictions for the demonstration of creativity, puts it in a narrow constraint, makes it necessary to find a compromise between copy and innovation. This is a complex task of the visual concept: not to go into complete copying, but also to preserve the figurative recognition of a historical source.

The developed piece products belong to the class of VIP souvenirs, because they have high cost. In the production of them natural silk, gold thread or izamet are used. The target audience is primarily state and non-governmental organizations, institutions that work in the sphere of international relations, as well as foreign tourists visiting the Republic of Belarus.

Weaving technologies, which were used in the production of Slutsk belts, required scrupulous scientific restoration. To develop a unique technology of Slutsk belts on modern weaving equipment and to expand the produced range became possible thanks to the great experience in designing fabrics of complex structures accumulated

in Vitebsk State Technological University. The production of the prototypes was made at RUE «Slutsk Belts». Previously lost technology for the creation of belts was recreated on modern weaving equipment.

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A COMPARATIVE ANALYSIS OF STRENGTH PROPERTIES BETWEEN BONDING AND SEWING KNIT FABRICS

СРАВНИТЕЛЬНЫЙ АНАЛИЗ ПРОЧНОСТНЫХ СВОЙСТВ КЛЕЕВЫХ И НИТОЧНЫХ СОЕДИНЕНИЙ ИЗДЕЛИЙ ИЗ ТРИКОТАЖА

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Key words: *bonded seam, thermoplastic tape, strength, elasticity, hemming, seaming.*

Ключевые слова: *клеевой шов, термопластичная пленка, прочность, растяжимость, подшивание, стачивание.*