World Applied Sciences Journal 27 (3): 408-412, 2013
ISSN 1818-4952

DOI: 10.5829/idosi.wasj.2013.27.03.13646

The Problem of Synthesis of Traditions and Innovations in the Art of Woodwork

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Abstract: The authors of the article give analysis of the traditional Altaic method of wood carving formed as a result of integration of some traditions of different ethnic groups living on the territory of Altai and of its arts and crafts role in decorating dwellings. Some specific peculiarities, drawings and themes of the house carving of Altai which may be viewed as a combination of pagan drawings and floral elements are revealed in the article. Along with these aspects a deep analysis of interaction of modern technologies and innovative changes in art wood working and the combination of manual work of a craftsman and digital computer technologies is given. The authors also examine modern equipment used in carver's workshop, define types of carving, more often used in the process of machining wood. In the article some successful and unsuccessful aspects of the modern traditional craft development are characterized.

Key words: Folk arts and crafts · Art wood carving · The Altai house carving · Modern technologies in art woodwork.

INTRODUCTION

The art of wood carving is one of the ancient folk arts and crafts. Art woodwork which appeared in the early ages is still popular nowadays, since it makes people's living space aesthetic, artistic and beautiful.

The best traditions of wood carving craft have been brightly demonstrated in dwellings decoration and were caused mainly by applied pragmatic aims. At the same time they played a definite decorative role. Till nowadays understanding of "a beautiful house" means the presence of openwork window casings, their function is to close slots between the blockhouse and the window box and to be a kind of border between the house and the outside world. Bargeboards had the same functions. On one hand, they were nice decorations on the attics of cottages, on the other - saved the roof from aging [1]. Carvings were closely connected with structural elements of the building and interacted directly with the material texture. Pine-tree, cedar, larch, birch-tree became wonderful material for carpentry, joinery and turnery. Depending on the character and purpose of the product made by the craftsmen, the choice of forest trees varied: pine- tree made the surface clean and even, it was used for carving; to make big dishes close-grained wood was used; and to make wooden artwork decorated with carvings craftsmen used birch-tree. As the result some definite skills and abilities were assimilated and transmitted from generation to generation. Man-made methods of art woodwork were perfected and changed according to the artwork functions and the customers' tastes, when constant traditions of the technique and artistic creativity were saved.

Artistic facing of the dwellings used to be more than simply a decoration, it was tightly connected with the function of the elements, significance of the form and decorative peculiarities of the reflected national views of the world and life. This was revealed brightly in the decorative ornaments. The ornament was considered not only the main indication of beauty, but also a special sign thanks to which a common carved decoration became a masterpiece [2]. The principle of making ornaments appeared from the views of the world around and reflected beliefs of the ancient Slavs who worshipped different powers of Nature and believed in their magic character. In the course of time the magic meaning of ornaments has lost its power but almost hasn't changed the traditional trends. Modern ornaments are divided into zoomorphic, anthropomorphous, geometric and floral.

Methods of Research: in the article the authors use the general scientific system approach which has made it possible to use historical, comparative analyses and analyses of art criticism.

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Main Part: The Altai method of wood carving is an amazing and versatile phenomenon, a unique layer of resettlement culture which is based on the integration of different ethnic groups' traditions. The Altai method of artistic wood carving is modest, laconic, not refined, it possesses a wonderful sense of proportion and harmony of composition solution. Besides it is closely connected with the material texture. The carved decorations saved undamaged on some houses in the Altai region, refer to the end of the 19th – beginning of the 20th centuries. They are made with the sawing throughout method of carving, which can often be found in the combination with the method of stratification. This provides using the two methods of carving ornaments in one artwork. A sawed throughout element put on the surface of another one underlined the lower silhouette of the carving. Here we also can see great relief carving. From the very beginning of development of the region along with the ancient methods in building and decorating peasants' houses some new elements appear in the Altai architecture. It was caused by the progress in the woodwork and penetrating of new elements, borrowed from the urban culture and sufficiently remade. Thus in the ornaments of jambs one can find spiral flourish, which is a characteristics of the urban art. The form of a jamb often ended with a semicircular line, on which spirals were combined with antropomorphous or styled patterns, Russian lilies or three leaves which have come to us from the ancient Russia [3].

Pagan drawings with solar signs, wavy crossed lines of water-like cornices got great development in the decor of the Altai carving. Jambs in the Altai wooden architecture are rich in twisting snakes, the symbol of fertility, in couples of horses' heads- personification of God of Sun; images of twin birds symbolizing the national views on happy marriage. Nevertheless an exact reproduction of birds is not necessary - it is the very idea of the fairy-tale birds that is important.

Another characteristic of the Altai house carving is abundance of floral elements with realistic pictures of field flowers and barriers, with carefully underlined specific peculiarities of every one as well as combinations of floral and zoomorphic patterns in one composition.

At present time in the century of actively developing modern technologies, some important innovative changes influence many kinds of creative manual work, most of all shown in art woodwork. Innovation is formed of the unity of contents and form, moreover, innovation of contents is impossible without the form renewed, when the last one is connected with the new technologies.

"In the history of every form of art there are some critical moments when it aspires to the effects, which can easily be reached in the terms of changing the technical standard, another words in a new form of art," wrote V. Benyamin more than a century ago. He was among the first to realize the role of technologies in art development [4].

Art woodworking has always been a long and labor-intensive process. Even for a perfectly skilled professional carver it took years sometimes to make a carved masterpiece like iconostasis or some external decoration of a house. But modern life demands to fasten the process of working wood. That is why manual creative labor of a master is combined today with digital computer technologies. That can seem sometimes incompatible. The symbiosis of computer technologies and folk art with its centuries-old traditions leads to impressive results. "The art of manual work should be harmoniously introduced to the boring modern workshop. Then you can expect appearing of a new wood carving style" [5].

Using nc machines was one of the innovations in making wooden carvings which lifted wood carving to a new higher level. This machine is desk-top, computer controlled, automatic and absolutely universal. The feasibility of these machines makes it possible not only to design a product but also quickly and exactly reproduce any type of the folk traditional carving such as contour, slotting, flat-relief, sculpture, lathe. Besides one can carve complex ornaments in different styles, many-sidedness and delicate work is amazing. One of the main advantages of using nc machines in art woodwork is, first of all, the speed of making an artwork. This reduces its cost. Thus, wonderful furniture with carved elements may be found in any house regardless of men's income level. Another advantage of using nc machines in the process of art wood carving is the possibility of creating tiny patterns 1 mm sized with perfect exactness.

To work using technologies of the kind a master should not only have carving skills, but also know computer programs such as Corel Draw, Adobe Illustrator, with the help of which he designs a multilayer unshaded drawing, a sketch. The quantity of layers depends on complicacy of the drawing. Layer is a line showing the cutter path. To make it easier the lines are filled with different colors and given different names. With the means of computer graphics you can create ornaments, which can be changed any time. Besides, one can manipulate with them saving different variants received. Some years ago it was impossible to do with the

traditional methods. When a pattern is made, the process of carving is programmed. Species of wood, its density and hardness should be taken to consideration. Many masters prefer to make sketches on paper, scan it, put it into computer and then make it vector generated on display. The computer-simulated pattern is sent to the memory card which is then nested in the machine.

The most popular types in machining tool art are the contour, slotting and geometric carving. They are often combined it the process. In the contour carving ornaments consist of different medullary spots, grid work and rhombs, cut with a contour in the shape of half or two-sided slot on the tinted ground.

In the slot, fretwork the ground is completely deleted, this creates the impression of airiness and lightness of the artwork. But the flat relief carving is the most decorative among all since the choice of the ground makes the carved pattern look bright and artistic. In this type of carving the image lies in one flat and the relief of carving which differs in shape and composition is revealed by choosing ground around some carving element or ornament [6].

Three-D, or statue in the round carving created with the help of computer graphics and new power-operated technologies is the most interesting of all. This type of carving is very complicated as it is machine tool carving. A product made in these techniques is a volume figure, art of woodwork. It is fully separated from the ground – the ready sculpture is viewed from all the sides. In contour and relief sculpture the pattern is created in the vector program. In machine carving, on the contrary, a complicated three-D model of the volume sculpture of an irregular form is designed with the help of special three-D graphics programs, Rhinoceros, 3DMax and others. To make a three-D sculpture in accordance with a made three-D model nc machines as well as three-D printers are used. This is a cheap and quick way to create prototype product. Three-axes-controlled machine can't process a template from all sides, so two parts of the sculpture has to be glued. Making the product using the program calculated according to the surface of a three-D model in a graphics system takes a lot of time. First some roughing work with circular cutter should be done, taking an extra layer off the template. Then finishing work is done with the single-ended bar blade (its line offsetting up to 1mm). Nevertheless, there is a disadvantage in the process- you can't work the so called "dead" zones where moving of the tool is impossible. That is why manual rework is necessary.

Thus, the advantage of creating art carvings is given to three-D printers. A usual three-D printing system, working with powder, can spread a thin layer of a substance on the platform. The software which controls the three-D inkjet printer puts on some binder where it is necessary. It interacts with the powder and fixes the particles. As the result a three-D figure appears. At different times people used glass, organics, synthetic fibers and other substances for three-D printing. Thanks to modern technologies we can use wood [7]. To make a machine sculpture a master should possess a perfect knowledge of special computer programs and different tools. Of course, he must also have artistic intuition.

To enlarge technological capabilities for creating artistic wooden things some additional devices are used, such as copying machines with template control of workpiece. With the help of this equipment it is possible to make different elements of carving, polypetalous flowers, rosaces, repeats of design with curved-undulated divisions, balusters and even genteel bas-relief elements. The principle of using this equipment is in manual copying patterns and milling templates at the same time.

Machines of this kind consist of the saddle with a spindle head, a table to fix it, work face with a fly wheel to move it in horizontally and vertically and a fixed pin with a copying head with the help of which the chosen temple or model can be copied exactly and transferred to another template. Special drills and end cutters fixed on the spindle are the cutting tools. A master uses the tracer to follow all the contours, recesses and cambers of a template, moving the working table up and down. The model can be transferred and machined in a different orthogonal plane, if necessary.

The spindle connected with the pin repeats all its automatic actions, reproducing an exact copy of the template model. An experienced master has good eye, his actions are exact so he can create his ornamental compositions directly on - machine. In this case machine is considered a gadget to simplify the work of master and to increase the workforce productivity.

The machine spindle is operated with an electric motor which makes 10-24 thousand revolutions per minute. This provides high quality of the processed cutting surface. Nevertheless, quality of machine cutting is lower than that of manual working. That is why it is necessary to rework manually the article and ornament for purpose-made furniture or when renewing antiquarian furniture.

During art woodwork a copying machine with pantograph is used. Machines supplied with pantographs have a device to transfer the defined drawing to a different scale with the help of a pin tracing the pattern contour. Pantograph copies the drawing on a blank part fixed on the machine, exaggerating or reducing it in scale according to the task [8]. Such machines can mill flat or curve work pieces as well as rotary bodies. This equipment is widely used in making furniture, statues, pad assembles, pilasters and other wooden artworks [9]. Nevertheless, there are some significant disadvantages in this case. Machine processing greatly depends on the experience of the master who copies the sample. During this process the human factor appears when a mistake is made. This may reject not one blank part but several ones during multiple-spindle milling. The difficulty of the equipment adjusting when changing milling cutters is also a problem. Besides, producing the copying templets is a constant need. It takes a lot of time during the initial stage of engineering tests. Casting articles copying samples manually is no more effective in the terms of the developing market and the growth of nc equipment capacity.

When analyzing types of casting wood articles, we must mention the technology of lathe turning. Wood turning is one of the main operations of processing wood with cutting, done on woodwork machines of turning group, as a rule with rotation mode of the article and forward mode of the cutter. Together with common lathe machines when working is done manually, modern woodworking enterprises use turn-milling ones quite often now. Processing tool of the equipment is a special disk cutter or an end cutter. These machines process the wood automatically according to the control programmed requirements. The operator simply needs to change blank parts and restart the new work cycle of the program. In spite of its extensive use in the processing, the product range of the turning equipment is rather limited. Usually it is represented by elements made in accordance with the form of the rotary body. That is why most of the turning machines are used for making balusters- bearing supports of stair flights railings. After the woodwork machining the quality of the surface always needs its manual dressing and decreases the productivity.

The technology of wood embossing is also well known. It concerns wood processing with pressure using matrices and punch stamps. The wood is preliminary steamed. High price of making stamps and inability of getting volume relief drawings during pressing made the technology widely used in casting souvenirs in high series lines, such as jewel-boxes, but not in exclusive articles, made in small lines made to order. The technology of laser engraving of wood as well as laser pyrography on scanned drawings is no more used nowadays in making volume patterns on wood.

Such technologies as sand blasting, steaming under pressure, laser engraving are not able to reveal volume bas-relief, high relief or sculptured forms in the piece of wood. That is why we simply mention them as existing types in the art of woodwork used mainly in texture application and flat drawings on the surface of wood articles.

CONCLUSION

Thus, having analyzed all the technical innovations used in modern wood work we can come to the conclusion that a traditional folk arts and crafts of woodcarving is being redesigned nowadays. But some questions appear – will manual work be able to keep its traditional methods, spirituality, its “life blood” coming from the remote past? Will the continuity of generations still be strong in spite of the process of globalization? One can hardly know the definite answer to these questions. On one hand, new technologies help to put the artwork out in mass edition, so it loses its unique character and authorship. Mass edition leads to losing traditions, refusing traditions results serious transformations in art.

Walter Crane underlined that in the epoch of numerous mechanical inventions and unprecedented ingenuity we have to come back to the hand as the best tool - part of any machine. We feel ourselves appendages of machines, we realize our loosing the sense of beauty and artistic understanding of our everyday work which no more seems interesting and romantic. We pay a very high price - it’s like life without happiness inside you [10].

On the other hand, the new time demands to fasten the process of making wooden things for house decoration as well as for art. One of the good trends in modern art is the presence of woodcarving in peoples’ life. Thus, in Srostki, an Altai village, a master of folk arts and crafts Kolesnikov S. together with his students has created the iconostasis, the altar, the credence table and the Holy doors for the church of the Great Matyr Katherine. By virtue of modern technologies of wood processing this great volume of work was done for a relatively short period of time. That was a good practice for the pupils, who could improve their technical knowledge and skills. Besides, they started to understand a feel the history and culture of the Russian people.

In the authors' opinion, new modernized technologies used in processing wood must be integrated, perfected and harmonized by the professional hand of a master. "A usual piece of wood will become of a greater value when glorified, improved and delicately purified" [11].

Finding Thus, We Can Conclude That:

- the Altai house carving is not only a local phenomenon. It interacts with all the folk arts and crafts and plays an important role in people's way of life. It is of architectural and artistic value in the context of historical and cultural heritage of Russia.
- Nowadays, in the century of high techs development, some changes which have touched many kinds of creative manual work are especially revealed in art woodwork.
- The art of woodcarving has been developing recently, bringing beauty, cultural wealth and aestheticism into humans' surrounding.
- Refusing to perfect any kind of production, including woodcarving, will lead to its reducing and then to the full stop. That is why a computer and a machine in the workshop of a master should become a complex tool like wood cutters. Machine cutting will make difficult work easier. As for the manual work, based on the traditional techniques, it will make the product look exclusive.

REFERENCES

1. Lipinskaya, V.A. 1996. Long-standing inhabitants and migrants (Russians in Altai IVIII-beginning XIX century.)- M.: Science.
2. Michailova, N.G., 2007. Folk culture in modern in the modern context//Substantive and physical world of traditional folk culture of the past in the modern context.- M., Science.
3. Stepanskaya, T.M., 2006. Special aspects of the Altai house wood carving// Architecture of Altai of XVIII-XX centuries.- Barnaul: Art-press.
4. Benjamin, W., 1936. Das Kunstwerk im Zeitalter seiner technischen Reproduzierbarkeit.
5. Wood carving: design and workmanship. 1903. Harvard University. New York. Appleton and company, pp: 197.
6. Krugover, V.I., 2004. Wood carving.- M. "Atrol Ltd", "LADA Ltd".
7. Woodworking news. 01/2010.
8. Amalitskyi, V.V. 2002. Wood processing machines and tools: College Textbook of professional Education. Ì.: IRPO: Publishing House "Academi".
9. Rainer, K.Wick, 1994. Bauhaus-Pödagogik. Köln.
10. Walter Crane, 1997. The claims of decorative art. Boston and New York. Houghton, Mifflin and company. The riverside press, Camridge.
11. Christopher Dresser, 1937. Decorative Design. Cassel Petter i Galpin.