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11TH HARDWOOD CONFERENCE PROCEEDINGS

Róbert Németh, Christian Hansmann, Holger Militz, Miklós Bak, Mátyás Báder



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Sopron, Hungary, 30-31 May 2024

Editors: Róbert Németh, Christian Hansmann, Holger Miltz,
Miklós Bak, Mátyás Báder



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Restoration of an old painted oak boardsign - A case study

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ABSTRACT

The present paper refers to restoring a small dimension, but great complexity and beauty old oak board, part of a blacksmith wrought iron signboard. The object belongs to the blacksmith guild and is impressive by its shape, proportions, manufacturing, decorated wrought iron elements, and painted ornaments on wood. The object was not restored before, though there were some previous attempts to remediate defects over time. The present restoration refers to the wooden panel exclusively and it was achieved following the restoration principles and code of ethics. The materials chosen for the restoration and conservation have determined the increase in the resistance of the finish, the finishing and bio-protection agents of the wood have improved the quality of the finished surfaces, being at the same time environmentally friendly materials, giving the object a lasting resistance and thus extending its life.

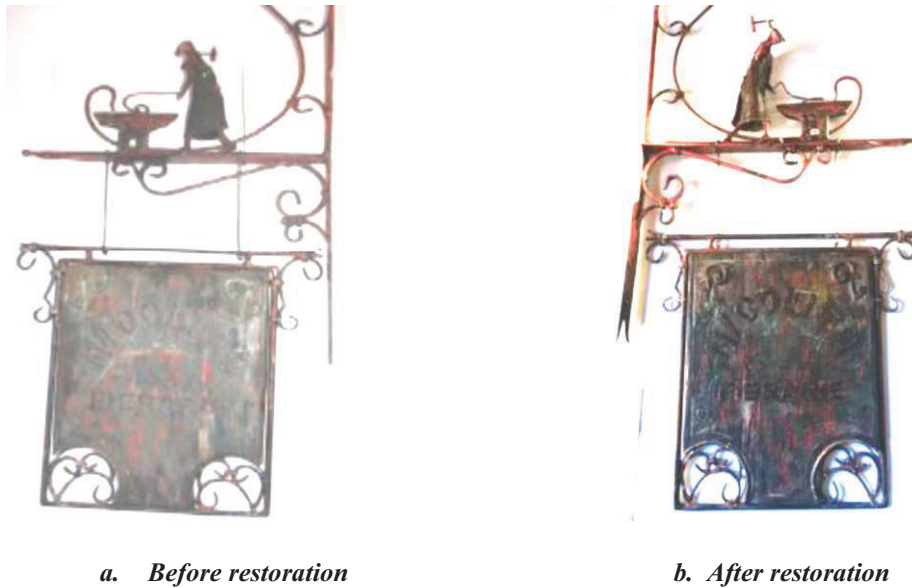
INTRODUCTION

The action of restoration is assumed by generations to conserve the traditions and cultural heritage. It refers to artworks, architectural monuments, and objects including furniture (Lloyd 2001, Timar 2003). Any furniture suffers over time from frequent accidents and needs specific interventions to extend its life. Most of the damages refer to the natural degradation of wood, finishing materials, and defects that occurred on joints, along with inappropriate conditions of use and storage (Bennet 1995). The restoration of any wooden object consists of several steps that must be respected and followed based on the general technical restoration principles (Brandi 1996, Timar 2007). This way, the effort for restoration is fully justified once memories can be kept for long with no alteration of the object's original shape, message, and patina (Bromelle and Thomson 1982). The present paper refers to restoring a small dimension, but great complexity old oak board, part of a blacksmith wrought iron signboard (Figure 1a). The object belongs to the blacksmith guild and is impressive by its shape, proportions, manufacturing, decorated wrought iron elements, and painted ornaments on wood (Canalas 2020). The present restoration work intended to bring the object back to its original state by keeping also the time patina and historical information. The wrought iron metal elements were also subjected to cleaning, degreasing, and finishing through specific methods, with specific materials, under the principles of restoration (see Figure 1b), but it is not the subject of the present work (Canalas 2020). Trade signs have been used even in classical times as historical devices of identification and persuasion. The making of signboards was a collaborative art craft between joiners, painters, and ironworkers.

MATERIALS

The entire assembly was recovered from a street vendor specializing in art objects, antiques, and bargains from the Banat mountain area in Romania. The advertising ensemble probably originates from the Anina area. It is a collector's item due to its particularities and uniqueness, taking into account the fact that the piece in its entirety was made by hand and represents the guild of blacksmiths and farriers certified in our country since the 14th century. This piece is a composition suggestively representing a blacksmith striking an anvil, harmoniously framed in a mesh of wrought iron elements with a special optical effect. The panel is made of oak wood, enriched with decorative, hand-carved elements that frame the corners at the base of the panel through stylized acanthus leaves. The panel was made up of

three wooden elements bent on the edge, the joint being made at first sight with an adhesive of animal origin, probably bone glue. The panel has the following dimensions: L= 400mm, l= 320mm, g= 20mm. The panel is fixed in a wrought iron frame by nail-type fasteners on the sides of the wooden panel. Several layers of decorative and protective paint can be seen on the surface of the wooden board.



a. *Before restoration*

b. *After restoration*

Figure 1: The old painted oak boardsign (Canalas 2020)

CONSERVATION STATE BEFORE RESTORATION

The state of conservation of the assembly before conservation was conditioned by the storage environment, handling over decades, aging of materials, aging of paint layers, glue, deformation of metal parts, poor preservation, and accidents. All these factors lead to deformations, fissures, cracks, loss of component elements, and biological attack occurs when dirt is deposited and encrusted. Another factor was human intervention, easily manifested through repairs at the level of metal and wood elements. The metal elements are not in an advanced phase of decay, they mostly keep their shape, showing light hits, deformations, scratches, and layers of rust. The conservation of the piece was probably never done, only layers of paint of different colors were applied, not respecting the originality of the piece. The piece has been exposed to the weather, as evidenced by erosion on the surface of the materials, missing parts, and elements that probably do not belong to the original piece. The first evaluation concludes that the advertising set has not been exhibited or used for commercial purposes for many years, otherwise it was protected from vandalism or its commercialization as scrap metal, and it was abandoned, not finding its place in the contemporary context. The object was not restored before, though there were some previous attempts to remediate defects over time. The present restoration was achieved following the restoration principles and code of ethics (Timar 2003, 2007). The panel shows a series of cracks of different sizes (Figure 2a), between 30 and 150 mm, located in the area where the parts that make up the panel are joined, clearly visible at the ends of the panel and on the side, this area being later grouted over a layer of paint. The corner at the bottom of the semicircle shows a loss of material and embrittlement of the support. Non-adherent deposits (light atmospheric dust, cobwebs, hanging objects, light mechanical intervention) and adherent ones (hardened dust, tars, repaints, saline efflorescence) were noticed. The carved ornaments show a marked degradation and loss of volume (Figure 2c). The edges of the panel show nail marks and holes with cracks formed around them. In the lower part of the panel, in the joint area, the material is embrittled and there is a loss of material and insect attack (Figure 2b). On both sides of the panel, cracks appear along the fiber, with some mechanical wear.

Degradations of pictorial layers were also noticed, such as scaling, peeling, erasing, and blistering. Losses of painting and preparation layers were found especially in the marginal areas and at the corners (Figure 2c). In the lower part of one face, along the crack, there is a lacunar surface where the pictorial layer and the primer are missing. On the panel inscription, there are traces of grouting with an uneven texture and it shows scaly surfaces and fragments of putty. The writing and the painted frame of the

panel have been repainted. The nails that make the connection, fixing the panel in the iron frame, are of different types, which shows that they have been replaced over time. Analyzes carried out freely consisted of photographic analyses, identification of the wood and the pictorial layer on wooden support, along visual analysis. Following the macroscopic and microscopic analysis, the wood species used was established to be oak wood. With the help of the magnifying glass, in bright light, it was possible to identify the severity of the degradation of the pictorial layer, due to the shadows cast by its unevenness. In the bright light and with the help of a magnifying glass, it was found that a repainting of the inscription and the painted areas of the panel was applied over the layers of color. Chemical investigations have been carried out and the results attested that the preparation layer contained a plaster-based primer mixed with chalk.

MANNER OF RESTORATION. DISCUSSIONS

Dismantling the wooden panel

Removing the wrought iron frame was a more difficult operation because it was fixed with metal nails, and some of them were rusty. For this operation forceps, patent, and scalpels were used. In the places where the nails were rusty, and their extraction was much more difficult, a little ethyl alcohol was injected (Canalas 2020).

Mechanical cleaning of the wooden panel

A light dedusting was carried out on the entire surface of the panel, with the help of a brush with soft hair, avoiding the areas where the color layers are very fragile.

Prophylactic strengthening of the pictorial layer

It was achieved by applying the Japanese thin paper with a solution of rabbit glue in a concentration of 3%. Japanese paper was applied to the fragile surfaces of the panel (Figure 2d). After the consolidation of the pictorial layers, the Japanese paper was removed with warm water (Canalas 2020). Through this process, the paper is removed by dissolving, but also the dirt, and as a result the color is strengthened.

Strengthening the support

One of the corners of the bottom panel was impregnated with a 3% rabbit glue solution followed by a 30% glue solution. To restore the flatness of the panel and to glue the crack, after injection, the panel was pressed with the help of plates, strips of wood, three metal presses, and spangles for 24 hours (Figure 2e, f). The melinex sheet was inserted between the panel and these wooden plates, to avoid their sticking. The last stage of the panel's consolidation was the impregnation with Paraloid B72 dissolved in 10% ethyl acetate (Canalas 2020).

Consolidation of the pictorial layer

It was done both cold and hot with alternating cold and hot presses. The gaps in the pictorial layer were degreased. The putty was sanded, hydrated, and thickened with a 4:1 solution of egg yolk in water with a preservative (Canalas 2020). Thus, to ensure the cohesion of the pictorial layers on the entire surface of the wooden panel, a hot solution of 6% rabbit glue was applied and the entire surface was hot-pressed with an electric spatula at a temperature of 60°C.

Disinsection

It was carried out with a Perxil 10 solution applied to the affected areas of the piece by injection with the syringe in all the holes, taking into account the possibility that the insect attack may still be active (Canalas 2020).

Filling in the missing parts of the panel

It was made by adding material of the same wood species, and balsit putty (Canalas 2020), prepared for the completion and reconstruction of wooden elements (Figure 2g).

Carrying out cleaning tests

Before the cleaning operation, cleaning tests were carried out to establish the solutions with good and effective responses on the pictorial layer. Thus, following the cleaning tests with different solvents, the

adherent dirt was cleaned with ammonia water (10 ml water, 10 drops of ammonia), and the encrusting dirt with a solution consisting of isopropyl alcohol, ammonia, and water in the proportions 90:10:10. The cleaning has a purely aesthetic purpose and is not necessary for the survival of the piece (Canalas 2020).

Cleaning the pictorial layers

To clean means to remove everything that disturbs the reading of the work, but it does not mean to return to the state when the work was created (Timar 2003, 2007). Among the restoration operations, cleaning is one of the most delicate. Depending on the dirt deposited on the surface of the piece and the resistance of the constituent material, certain solvents were chosen to clean the adhering and encrusted dirt. The cleaning of the pictorial layers was carried out differently, taking into account the nature of the dirt and its sensitivity to certain solvents, established after the cleaning tests (Timar 2003, 2007). The removal of adhering and encrusted dirt was carried out by methods adapted to the state of conservation and the nature of the pigments, on distinct forms and in successive stages, with time intervals between operations to control the state of the pictorial layer. The solutions were applied at different contact times, with combined cleaning methods, a condition imposed by the sensitivity of the pigments (Canalas 2020). The layer of ingrained dirt and brown areas on the bottom of the panel was removed with a solution composed of isopropyl alcohol, water, and ammonia in proportions of 90:10:10 and 50:25:25, respectively, with the help of a cotton swab, and by mechanical cleaning with a scalpel.

Gap filling

When carrying out a material addition, certain principles must be respected, such as the use of materials that are as stable as possible and resistant over time, materials that can be easily removed (reversible), the integration should not be noticeable by close, the limits of the gap should not be exceeded and the restorer should adopt a modest attitude without leaving the imprint of his personality (Timar 2007). For the superficial and deep gaps of the painting layer, a layered application of putty based on 5% rabbit glue and purified chalk dust was used (Figure 2h, i).

Chromatic integration

The chromatic integration of the grouted areas was made with oil-based colors. In the case of small gaps, point-like touch-up (rittoco) was used to establish a continuity of tone, a technique that respects the minimum intervention and the tones used are neutral grays (aqua sporca). The *tratteggio* technique (with lines) was applied to large chromatic gaps. The chromatic integration of the putties completed the image unity of the wooden panel. Extrafine oil colors (Maimeri SPA) were used in the *tratteggio* technique. In the area of the inscription where the pictorial layer of the letter was missing, a shredded shoe soaked in glue was placed, recreating the volume of the letter. A paper template covered with adhesive letters, which allowed the outline of the letters to be preserved, was used (Canalas 2020).

Varnishing

The varnish used is a 10% solution of Dammar dissolved in turpentine applied by brushing (Tintoretto brush 1433). Three layers have been applied successively, with drying intervals in between. The last layer was thin and undiluted, first stretching in one direction, then changing the direction perpendicularly (Canalas 2020). This final coat gives the gloss.

CONCLUSIONS

The materials chosen for the restoration and conservation of the wooden panel have determined the increase in the resistance of the finish, the finishing and protection agents of the wood have improved the quality of the finished surfaces, being at the same time environmentally friendly materials, giving the object a lasting resistance, and thus extending its life. The restoration returned the object to a state as close as possible to the original one. The authentic elements were well-preserved and the intervention brought to light the original beauty of the restored object, its charm and patina of time.



a. Longitudinal cracks



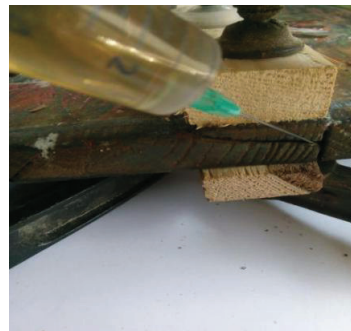
b. Holes of insect attack



c. Carved corner ornament and the degradation of pictorial layer



d. Pictorial layer consolidation with japanese paper



e. Wooden panel consolidation



f. Obtaining the panel flatness



g. Addition of material



h. Final cleaning by easy brushing



i. Pictorial layer with putty

Figure 2: Conservation state (a-c) and steps of restoration (d-i) (Canalas 2020)

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