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## **Riddles and mysteries of grandfather clocks from the palaces of Peterhof and Tsarskoye Selo**

*Abstract:* The article is devoted to the conservation and restoration of the upper part of the wooden carved gilded case of the grandfather clock from the White Dining Room of the Grand Peterhof Palace, which lost its expositional appearance as a result of the distortion of its appearance by late multi-layered oil painting, as well as the reconstruction of the lost lower part of the watch case with its subsequent finishing on the basis of an analogue and documentary research. The novelty of the topic lies in the comprehension and understanding by the restorers of the uniqueness of artworks, both at the time of their creation by the authors, and in the individuality of the conditions for their utilitarian use, storage, and exhibition, which were reflected in the distortion of the exhibition view as a result of various negative impact factors. The study subject was the works of European arts and crafts of the 18<sup>th</sup> century with a wooden base and decoration in the form of combined decorative gilding. The study object was the combined gilding of the wooden case of an 18<sup>th</sup>-century grandfather clock with a musical mechanism, made in Berlin by watchmaker Konrad Erbar. The study purpose was to identify the author's finish of the object of restoration and to determine the methods of its conservation and reconstruction in order to return the work of exposition. In the study course, historical-archival, iconographic and comparative-analytical methods were used. The article highlights the process of technology research related to the history of finishing the wooden gilded case of the 18<sup>th</sup>-century grandfather clock, created by the watchmaker Konrad Erbar; the process of removing late multi-layered layers of oil paints from the author's finish in the form of decorative combined gilding, conservation of the ground with finishing, reconstruction of various types of gilding on gesso, applying tinting to restoration gesso and gilding are described.

*Keywords:* conservation, restoration, reconstruction, glossy and matt gilding, late painting, White Dining Room of the Grand Peterhof Palace, Great Hall of the Catherine Palace, Tsarskoye Selo.

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## **Загадки и разгадки тайн напольных часов из дворцов Петергофа и Царского Села**

*Аннотация:* Статья посвящена консервации и реставрации верхней части деревянного резного золочёного корпуса напольных часов из Белой столовой Большого Петергофского дворца, утратившего экспозиционный вид в результате искажения внешнего вида поздними многослойными масляными красками, а также реконструкции утраченной нижней части корпуса часов с её последующей отделкой на основе аналога и документальных исследований. Новизна темы заключается в осмыслении и понимании реставраторами неповторимости произведений искусства как в момент их создания авторами, так и в индивидуальности условий их утилитарного использования, хранения, экспонирования, отразившихся на искажении экспозиционного вида в результате различных отрицательных факторов воздействия. Предметом исследования являлись произведения европейского декоративно-прикладного искусства XVIII века с основой из дерева и отделкой в виде комбинированной декоративной позолоты. Объектом исследования являлась комбинированная отделка позолотой деревянного корпуса напольных часов XVIII века с музыкальным механизмом, изготовленных в Берлине часовым мастером Конрадом Эрбаром. Целью исследования было выявление авторской отделки предмета реставрации и определение методов его консервации и реконструкции для возвращения произведению экспозиционного вида. В ходе исследования использованы историко-архивный, иконографический и сравнительно-аналитический методы. В статье освещён процесс исследований технологии, связанный с историей отделки деревянного золочёного корпуса напольных часов XVIII века, созданных часовым мастером Конрадом Эрбаром; описан процесс удаления поздних многослойных наслоений масляных красок с авторской отделки в виде декоративной комбинированной позолоты, консервация грунта с отделкой, реконструкция разных видов золочения по левкасу, нанесение тонировок на реставрационный левкас и позолоту.

*Ключевые слова:* консервация, реставрация, воссоздание, реконструкция, глянцевое и матовое золочение, поздние краски, Белая столовая Большого Петергофского дворца, Большой зал Екатерининского дворца Царского Села.

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## Introduction

The relevance of the topic is inextricably linked with the preservation of the cultural material heritage and, in particular, numerous objects of decorative and applied art that have changed their appearance, both as a result of unforeseen circumstances, and from the natural aging of their base and decoration materials. It also lies in the fact that the preservation of the Russia's cultural heritage monuments was, is, and will be the most important at any time for the transmission of the traditions of folk crafts from generation to generation, which is especially important for the aesthetic and moral education of young people. Love for the Motherland, for people who create and preserve beautiful artworks for contemporaries and posterity should be instilled through love for creativity in various fields.

The novelty of the topic lies in the comprehension and understanding by the restorers of the uniqueness of works of art, both at the time of their creation by the authors, and in the individuality of the conditions for their utilitarian use, storage, and exhibition, which were reflected in the distortion of the exhibition view as a result of various negative impact factors.

The study subject was the 18<sup>th</sup>-century European artworks and crafts with a wooden base and decoration in the form of a combined decorative gilding.

The study object was the combined gilding of the wooden case of an 18<sup>th</sup>-century grandfather clock with a musical mechanism, made in Berlin by watchmaker Konrad Erbar.

The study purpose was to identify the author's finish of the restoration object and determine the methods of its conservation and reconstruction to return the exposition work.

Based on the study purpose, the following tasks were set:

- study the sources of information on the combined decoration of woodwork in the 18<sup>th</sup> century;
- search for analogue works;
- present full-scale analytical studies obtained while working with the monument and information materials;
- perform a set of measures and a description of the methods for returning the museum object to its expositional appearance.

In the study course, historical-archival, iconographic, and comparative-analytical methods were used to restore the historical picture of the technology for creating the 18<sup>th</sup>-century carved gilded wooden grandfather clock case with a musical mechanism by the German watchmaker Konrad Erbar. The applied study methods make it possible to analyse the historical changes in decoration and, based on an analysis of their current state of preservation, develop techniques and methods for returning a work of decorative and applied art to a historical, aesthetic, and expositional form, thereby extending the life of a work for a long time.

#### **Search for sources of information on the creation of works of wood and their decoration with decorative gilding, analog works and analysis of the information received**

The history of the creation of palace and park ensembles in Peterhof and Tsarskoye Selo is described in the books of A.N. Benois, G.K. Lukomsky, A.A. Kedrinsky, I.A. Gurevich and V.V. Znamenova, M.M. Izmailova, I.F. Yakovkin give an idea of the time and architectural styles, created interiors and some objects of arts and crafts that adorn the interiors of the front halls of suburban palaces, recreated after the sad events of the Second World War, and give the researcher only a general idea. They do not cover the details of the manufacturing technology, information on the history of the existence of certain objects of decorative and applied art, methods of their restoration in cases of loss of the exposition appearance (*Gurevich & Znamenov, 1979; Izmailov, 1909; Kedrinsky et al., 1983; Kedrinsky, 2013; Lukomsky, 1926; Yakovkin, 2008*).

Researchers-performers needed to find reliable iconographic material to restore and reconstruct the lost base of the lower part of the grandfather clock case and present its true finish using types of decorative gilding characteristic of the 18<sup>th</sup> century. According to the documents provided by the customer, it was known that these watches were made at the manufactory of watchmaker Conrad Ehrbar in Berlin in the 1770s. According to B. Geres, “the watch was a gift from Prince Heinrich, brother of the Prussian King Frederick II, presented to Catherine II or her heir Pavel Petrovich during Henry's visit in 1776 or sent as a gift after this visit.”

According to the custodian of the furniture fund, O.S. Kislitsina, the first documentary information about the clock dates back to 1816. In the inventory of the Grand Palace, the clock in the White Hall (Dining Room) is mentioned as gilded with a gap. Subsequently, the watch was repeatedly repainted, completely replacing the gilding, which, probably, was lost more and more over time, with paint. This grandfather clock was in the interior of the White Dining Room of

the Grand Peterhof Palace until 1941. In early September 1941, the upper part of the building with the musical mechanism was evacuated to Leningrad, while the lower part of the building remained in the palace and burned down during a fire on the day Peterhof was captured by the Nazis.

The palace and park ensemble of Peterhof was created in the 18<sup>th</sup> century by the work of Russian compatriots under the guidance of foreign architects and craftsmen who came with them to Russia to teach Russian masters the art of interior decoration. In 1714-1725, architects J.-B. Leblon and N. Michetti created the interiors of the Grand Peterhof Palace, including the hall, later called the White Dining Room.

In 1748-1752, this hall was decorated by the architect F. Rastrelli in the Baroque style by order of Empress Elizabeth Petrovna, but this interior did not last long.

The change in the architectural style, the change in the owner of the palace and the tastes of the new mistress, Catherine II, led to the fact that in 1774-1775, by her Decree, Yu.M. Felten remade the once baroque hall with lush ornamental compositions into an interior with stucco decoration in soothing monotonous light colors, calling it the White Dining Room. The white dining room of the Peterhof Palace existed with almost no changes in decoration from the end of the 18<sup>th</sup> century until the sad events of the summer of 1941.

During the construction and decoration of interiors in the 18<sup>th</sup> century, some unique items of decorative and applied art were ordered simultaneously with the decoration of palace halls abroad in well-known companies that manufactured their products using the advanced technologies of that time and the impeccable quality of the products. Among them was Konrad Erbar's watch manufactory, which was famous for making outdoor interior clocks with a musical mechanism in wooden cases, decorated with carved gilded decor according to all the canons of high-quality finishes.

A search for materials on this issue in Internet resources gave researchers information that such companies exist to this day, continue to manufacture interior floor clocks for individual orders for every taste and budget.

In the guide M.M. Izmailov, published for the 200<sup>th</sup> anniversary of Peterhof in 1909, there is a photograph of a fragment of the White Hall depicting a Russian-made ceramic stove, and in the description of this hall on the same page 97 it is written: "The furniture of the hall is all white, upholstered in cream-colored silk. In the corner is an old clock in a white case. That is all the information that could be gleaned from printed sources on this issue (*Izmailov, 1909*).

Similar grandfather clocks made in Berlin were in the collection of the State Hermitage Museum and earlier in the Catherine Palace in Tsarskoe Selo. The fate of the Catherine Palace and the evacuation of valuables was similar to the fate of the works of Peterhof. The fate of the Tsarskoye Selo clock by K. Erbar remains unknown to this day, since they are not available either in the exposition or in the funds. In the registers of the Catherine Palace Museum objects of different years, no records were found about the fate of these watches. The inventory books of the evacuation time do not contain information about the location of these watches (*Lukomsky, 1926*).

Among the literary sources, it was possible to identify the G.K. Lukomsky's album with photographs of the Catherine Palace interiors in Tsarskoye Selo, published in Berlin in 1924 in German, where against the background of the central opening of the end wall of the Great Hall

there is a (conditionally similar) grandfather clock with a carved gilded decor on the upper part of the case and selective gilding of the carved decor on the front side of the door. Separate fragments were similar to the decorative elements of the door of the lost lower part of the Peterhof clock case. This source of information was revealed much later than the process of restoration of the watch case itself. The Tsarskoye Selo clock in the photograph of 1924 is also depicted “in a white case” (*Lukomsky, 1926*).

To perform the work, the performers were given pre-war black-and-white photographs of fuzzy quality that were available in the museum at that time, in which the entire watch case from top to bottom was painted with paint of different colours.

When studying the sources of iconographic material for the decoration of wood products during the restoration of objects of decorative and applied art in the form of combined gilding, any trifles are important, which should be paid special attention to the performers of the work – gilding restorers.

In this regard, I had to additionally turn to a variety of iconographic materials: guidebooks from the pre-revolutionary years, old postcards and photographs, and consider a large amount of information on the Internet. The search and analysis of the obtained material has borne fruit and even made it possible to trace some of the movements of those and other palace grandfather clocks through the halls in different periods of time.

In the course of searching for the necessary information on the grandfather clocks of the imperial palaces of Peterhof and Tsarskoye Selo, we studied old postcards of the early 20<sup>th</sup> century, published by the Association of R. Golike and A. Wilberg, located in photo-tinto engravings of the partnership “Obrazovanie”. These were small-scale images of Konrad Erbar’s watches in the Great Hall of the Catherine Palace, on which it was impossible to see the details of the cases. It was only visible that the upper part of the body was gilded, and the lower part was white. Also, in another photograph of the Great Hall, in the same place where the Erbar clock used to be, there was another grandfather clock with a lacquered finish on the case. Their fate, by the way, is also unknown (*Figure 1; Figure 2; Figure 3; Figure 4; Figure 5; Figure 6*).

At the same time, none of the identified old photographs showed a grandfather clock in the interior of the White Dining Room of Peterhof. The photographs found on the Internet, was fragmentarily presented only a served dinner table against the background of the White Dining Room corner with stucco decoration on the walls.

However, in later photographs and postcards with post-war period images of the White Dining Room of the Peterhof Palace, grandfather clocks from D. Röntgeng’s company were revealed. They had a complex architectural form as a cylindrical column with a clock in the center, crowned with a classical vase in the upper part of the composition, and a stable massive cubic base at the bottom. This clock was made of mahogany and had a lacquered base finish. In different photographs, the grandfather clock was located either on the left or on the right in the corner near the outer wall of the hall. Subsequently, this clock could be seen in the corner of the Chesma Hall.

When studying photographs of the Catherine Palace interiors of different years, the researcher’s attention was suddenly drawn to a very familiar dining table, standing for some reason in the Portrait Hall of Rastrelli’s Golden Enfilade, and not in its rightful place in the White Front Dining Room. The search for photographic materials of the White Dining Room



interior led the researcher to several more images of the same table and in the White Dining Room before and after restoration. Suddenly, in one of the old photographs (most likely from the beginning of the 20<sup>th</sup> century), to the right of a table that was also historically served, but covered with another tablecloth, stood the clock Konrad Erbar was looking for. And just like in the revealed photograph of 1924 in G.K. Lukomsky's book, for this watch, the upper part of the case was gilded, and the lower part was white with applied carved gilded decor.

It should note that when comparing the images of the two works, it was obvious that both watch cases were of different shapes. Those and other watches had original compositions of the upper parts of the cases, different from each other. They were topped with vases of various shapes. The Peterhof clock was crowned with a strict composition of a classic vase, stretched upwards, located on a light body with arches and gossamer doors for better sound output from the musical mechanism. The front door of the upper part of the case was richly decorated with shells, leaves, and flowers. The upper part of the Tsarskoye Selo clock was decorated with a wide low vase in the form of a bowl with a lid. The ornamental part of the upper door was also more modest in decor than the original door from the Peterhof Palace.

The lower parts of the buildings were also different. Peterhof watches had a case that expanded significantly downwards and ended with powerful developed currencies. They were more voluminous compared to the clock from Tsarskoye Selo (*Figure 3; Figure 45*).

The case of the Tsarskoye Selo clock compared to the case of the Peterhof clock was, as it were, stricter, elongated and more straightforward in the shape of the lower part, lighter in weight. It expanded slightly only at the very bottom, necessary for the stability of the hull. The resemblance of carved overhead elements in the decor is observed in the decoration of the front doors of the cases and the ornaments of the side walls of the cases; repetitions in the ornamental part of individual elements, but used in other compositional solutions. These were custom orders.

Literary sources on the creation and decoration of decorative and applied interiors artworks in terms of work technologies and methods of old masters such as V.L. Antsov, L. Lermontov, K.A. Kaznacheev, A.S. Nikolaev, A. Reshetnikov, and L.P. Schmidt made it possible to study various options for technologies and recipes used by masters of the past in the field of creating works of decorative and applied art and their finishing options, made it possible to analyse the information received and choose the most acceptable recipes for the finishing compositions of the preserved upper part of the grandfather clock (*Antsov, 1908; Lermontov, 1890; Nikolaev, 1949; Reshetnikov, 1971; Schmidt, 1909*).

Special literature on the restoration of works of tempera and oil painting and chemists-technologists authors V.V. Filatova, M.K. Nikitina, E.P. Melnikova and T.S. Fedoseeva made it possible to comprehend and evaluate the historical value of the watch case decoration, to decide on the choice of materials for the restoration and reconstruction of the lost fragments of the base with decoration; reveal the secrets and methods of restoration of the monument, thanks to which, in a fairly short time, it was possible to restore a complex monument and give this work of the past the future (*Nikitin & Melnikova, 1990; Fedoseeva, 1999; Bogdanov et al., 1986*).

*Thus*, as a result of searching, collecting and conducting comparative-analytical studies of historical documents, iconographic material on two similar monuments, obtained from literary sources of information about the technologies and materials of the base and finishing of

products of the past, as well as a direct study of the presented fragment of the original, were selected methods of conservation and restoration of the upper part of the grandfather clocks case, methods of their implementation, corresponding to the tasks of the complex revival of the monument.

### **Returning the exposition type to the museum object**

The architect, the author of the restoration project, together with the museum's researcher, curator of the furniture fund, specified the restoration task. The overall dimensions of the grandfather clock case were impressive. Among the works of arts and crafts, this case of grandfather clocks can even be considered a monumental work (316 x 80 x 60 cm) due to its size.

Only the upper part of the case was available, and the lower part was missing, it had to be reconstructed and finished in the form of combined gilding according to the technology of the 18<sup>th</sup> century. The available upper part of the grandfather clock case, provided for restoration, was repeatedly painted with oil paints of different colors: beige, pink, grayish-blue, obviously not the author's one, but unprofessionally applied late (*Figure 7; Figure 8; Figure 9; Figure 11; Figure 13; Figure 15; Figure 21; Figure 25; Figure 27; Figure 28; Figure 34; Figure 37*)

The author's decoration was distorted beyond recognition, and in no way, even remotely, did not remind that it was a "white case", as it was said in Izmailov's guide. Restorers of carvings and decorative gilding compiled detailed descriptions of the technical condition of the monument before restoration, studied the necessary materials and documents, and historical references.

In the restoration task, it was ordered to restore the wooden base and the author's finish of the upper part of the watch case, to reconstruct the lower part of the watch case in wood, to recreate its carved decoration and gilding on the basis of the analogue. The work had to be divided into two stages.

#### *Stage 1. Task for the restoration of the upper part of the watch case:*

- perform the necessary carpentry repairs with cracking, filling in the losses of the base of the watch case and correcting the base wood deformation;
- make up for the loss of carved decor in the monument material;
- remove multi-layer late painting with oil paint from the surface of decorative gilding;
- recreate decorative gilding;
- toning new gilding to match the historical colour.

#### *Stage 2. Task for the reconstruction of the lost lower part of the grandfather clock case:*

- make the lower grandfather clock case part in wood;
- make carved decor for the doors and side surfaces of the clock case in the monument material according to the 18<sup>th</sup>-century analogue;
- produce a high-quality finish using the technique of combined gilding with a combination of glossy gilding on poliment and matte.
- tint the restoration gilding to match the historical colour.

*Note. When performing a complex of conservation and restoration works, discuss their progress and make collective decisions at the restoration councils.*

Before starting work, Vladimir A. Gradov, the oldest restorer of State Hermitage woodwork, came to our workshop at RUST LLC for a consultation, with whom we discussed all the stages of work on the monument and chose the most optimal solutions.

The artist-restorer of works made of wood A.V. Antonov got instruction to perform the necessary carpentry repairs with cracking, make up for the loss of the base of the watch case and correct the base wood deformation, and also, make up for the loss of carved decor in the monument material, which he successfully performed with the necessary and inherent accuracy and professionalism. The restorer very carefully performed his work to restore the base, secured the case sides with a plank so that they retained the author's geometric dimensions. The fact is that there was no back plate at the top of the watch either, since initially it was made to the entire height of the watch case for the top of the case and the lower part as a single element, which gave the high wooden product the necessary rigidity.

The work of removing multi-layered late oil paints from the decoration surface of the upper part of the grandfather clock case to possibly reveal the surface of the decorative historical gilding was entrusted to the artist-restorer of the gilding of the highest category N.M. Fomicheva. In the event that the author's finish was discovered after clearing, it was necessary to recreate two types of decorative gilding: glossy on a poliment ground and matte on an adhesive binder. The upper historical part of the clock that the author of the article got left made a depressing impression.

For what purpose and who painted this object so "picturesquely", no one knew. The author of the article had to work very carefully and remove the paint layer by layer. This work is painstaking and complex, given that it was not known in advance what type of gilding was previously performed on the watch case, and whether the author's or historical gilding was preserved. Style is style, and no one canceled later interventions in the monument, they were, as they say, on the face.

In this regard, not to loosen the carpentry connections restored by Alexei, the author of the article had to put the watch case on the roof of a solid wooden typesetting board, since this upper-case part also did not have a bottom, and could not have been. Otherwise, how could a pendulum move there, in a clock, and weights would be located?! The upper watch case part was intended only for the musical mechanism. The author of the article noted that the side doors of the top of the case were of a radial shape with a very thin through slotted gilded thread in the form of a web, so that the musical sounds could be clearly heard during the mechanism operation. A small architectural superstructure on the main body in its upper part also had arched openings for better sounding of the melodies being played (*Figure 15; Figure 21*).

The top of this part of the body was decorated with decorative architectural elements in the vase form with a towel on its body and an interesting lid with a previously lost element, which was later made by someone in the form of an onion that completed the vase. The base of the vase and plinth existed on their own. Previously, all the details of this structure were fastened together with wooden dowels and put on glue. The dowels and glue dried out from time to time and ceased to fulfill their functions. After the restoration of the base of the top of the watch case, Alexei set about restoring the dowels of this architectural structure. (*Figure 7; Figure 27; Figure 40; Figure 41; Figure 42; Figure 43; Figure 45*).



When revealing late non-professional painting with oil paints, it turned out that the watch case was gilded at one time using the technique of combined gilding on gesso with the use of red-brown poliment in combination with matte glue gilding on shells and stylised leaves. This circumstance made it possible to clean the top of the watch case layer by layer with organic solvents. Otherwise, with author's lacquer gilding, one could lose the original author's gilding ([Figure 10](#); [Figure 12](#); [Figure 14](#); [Figure 17](#); [Figure 18](#); [Figure 19](#); [Figure 22](#); [Figure 23](#); [Figure 26](#); [Figure 29](#); [Figure 30](#); [Figure 31](#); [Figure 35](#); [Figure 38](#)).

On most of the ornament, this primer-poliment was preserved, but was badly worn, as if someone had tried to scrape off the gilding from it before starting to "paint" the watch with oil paints. The author of the article had to work with the help of a gel B-52, a remover of old paint and varnish coatings, which the author of the article applied to small areas, covered with polyethylene for 10-15 minutes, and then carefully removed the top layer of swollen paint with a wooden stack. And so, each of the colourful layers of different colour, thickness and application time was carefully removed layer by layer. After removing the paint, the surface was treated with cotton wool micro swabs on a torch, moistened with acetone, with great care to stop the process of swelling of the lower paint layer. Each working area was periodically treated with a cotton swab moistened in acetone. When working with solvents, technological breaks were made after short time intervals ([Figure 10](#); [Figure 12](#); [Figure 14](#); [Figure 16](#); [Figure 22](#); [Figure 29](#); [Figure 35](#); [Figure 38](#)).

This operation took quite a long time. In the end, the author of the article managed to still identify the author's finish and what was left of it. To her great surprise, her experimental tests on gilding on poliment gave a very positive result. Although after so many layers of oil paint and how to remove it from the surface of the author's gilding, she could have expected anything, but it turned out the way it was necessary for the case. This could not but rejoice her, since after unprofessional interventions in the author's decorative glossy gilding, it is not always possible to restore this particular type of gilding. He is very afraid of mechanical impact, moisture, grease, and even more so such harsh manipulations to remove multilayer oil shadings on the finest gilding using chemical solvents.

The process of restoring the losses of the author's glossy gilding went almost without complications. After that, it was also possible to perform local matte gilding in places where it was lost. ([Figure 20](#); [Figure 24](#); [Figure 32](#); [Figure 33](#); [Figure 36](#); [Figure 39](#); [Figure 40](#); [Figure 41](#); [Figure 43](#); [Figure 44](#); [Figure 45](#)).

The new gilding tinting to match the colour of the preserved author's one had to be done with extracts from the roots and bark of plants, prepared in advance in the form of alcohol solutions. These extracts, added in small quantities to the matte solution, regulated the shades of restoration gilding in different areas ([Figure 45](#)).

*Thus*, in the course of restoration work on the removal of multi-layered late shading with oil paint, a complex state of the author's decoration of the decorative gilding of the upper-case part was revealed. However, despite the presence of only traces of gilding, it was possible to reconstruct both glossy and matte gilding; and then, with the help of extracts from the roots, bark and resins of tropical plants, give the new gilding a shade of old gold.

### **Reconstruction of the base and finish of the lower part of the watch case**

The reconstruction of the lower watch case part was performed by the craftsmen of Rust LLC: Valery S. Antonov, an artist-restorer of ornamental carvings and sculptures made of wood, and cabinet maker Andrei B. Klementiev.

Based on the drawings, the craftsmen made the lower part of the grandfather clock case in wood; made a carved decor for the front figured door and side surfaces of the clock case in the monument material, in linden wood, according to the 18<sup>th</sup>-century analog (*Figure 42; Figure 43*).

*Thus*, the reconstruction of the base of the lower watch case part required a serious engineering solution for the implementation of the project, both in the reconstruction of the figured shape of the case, and in resolving the issue of opening the front figured door of the case, associated with the subsequent operation of the grandfather clock case. After accepting this part of the work, the watch case was transferred to Dedal LLC. There, under the guidance of the artist-restorer of gilding of the highest category R.A. Shkarednykh gilding on gesso based on wood using the 18<sup>th</sup>-century technology with a combination of glossy gilding on poliment and matte was recreated. Then the restoration gilding was tinted to match the color of the historical (*Figure 44; Figure 45; Figure 46; Figure 47*).

### **Discussion**

In the course of the researcher's search for iconographic and historical archival materials, questions arose regarding the history of the creation and existence of the analog and other grandfather clocks of the Catherine Palace in Tsarskoye Selo, as well as the history of their mysterious disappearance from the exposition. The author of the article would like to know when and how they disappeared from the palace: were they sold in the 1920s and 30s, or perished in the fires of the war, or were they taken to Germany, how many cultural values are still in private hands? The answers to these and other questions are to be found in the documents.

### **Conclusion**

In the study course and restoration work on the return of the grandfather clock case of the exposition type, a search was made for analogue works.

An analogue for the work on the reconstruction of the lost lower part of the grandfather clock case in the White Dining Room of the Grand Peterhof Palace was the grandfather clock from the Great Hall of the Catherine Palace, made in the 18<sup>th</sup> century on a special order by the Berlin watchmaker Konrad Erbar.

The restorers also identified and studied literary and iconographic sources of information on the combined decoration of decorative and applied artworks made of wood of the 18<sup>th</sup> century and historical iconographic materials on these monuments with comparative analytical studies of the information received about the monument.

For the direct implementation of the restoration processes, the selection and implementation of work methods for the conservation of historical decor and finishing of the watch case, restoration and its reconstruction, as well as the processes of recreating the base of wood, carved decor and finishing the watch case with decorative gilding for the return expositional museum item.

After performing a set of necessary restoration processes and the painstaking work of a cabinet maker, restorers of ornamental carvings and sculptures from wood, gilding restorers and

gilders managed to restore the expositional look to the watch case, which made it possible to return the grandfather clock to its historical place in the interior of the White Dining Room of the Bolshoi Peterhof Palace, where they are currently exhibited.

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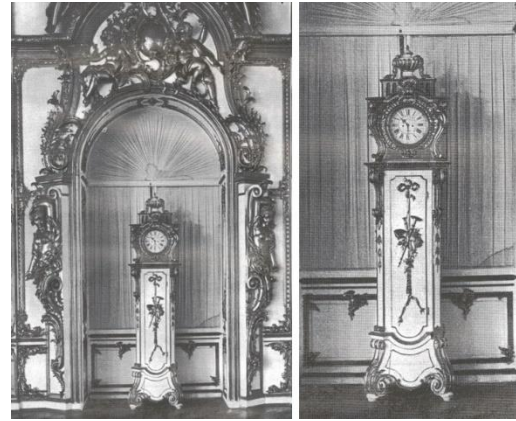
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## Appendix



Figure 1. Great Hall of the Catherine Palace before the revolution. 1910s



Figures 2-3. Grandfather clock by Konrad Erbar in the Great Hall of the Catherine Palace. Photograph published in Berlin by G. Lukomsky in 1924



Figure 4. Great Hall of the Catherine Palace. 1910s. Another grandfather clock in the same place where Konrad Erbar's grandfather clock was previously located. Another stucco decoration on the Great Hall



Figures 5-6. Grandfather clock from another company with a lacquer finish on the same spot in the Great Hall



Figures 7-8. The upper grandfather clock case part before restoration with numerous and multi-layered decorative gilding



Figures 9-10. The upper front part of the grandfather clock case in the process of restoration and removal of numerous and multi-layered shadings of decorative gilding and after this process with the opening of the author's gilding on poliment and glue





Figures 11-12. A fragment of the front side of the upper watch case part in the process of removing multi-layer shading with oil paint from the surface of decorative gilding on poliment and after removing multi-layer shading with oil paint from the surface of decorative gilding on poliment

Figure 13-14. A fragment of the front side of the upper watch case part in the process of removing multi-layer shading with oil paint from the surface of decorative gilding on poliment and after removing multi-layer shading with oil paint from the surface of decorative gilding on poliment



Figures 15-16. General view of the left side door of the upper watch case part with solid multi-colour and multi-layer painting of the author's finish with oil paints before restoration

Figures 17-18. General view of the left side door of the upper watch case part with solid multi-colour and multi-layer painting of the author's finish with oil paints and loss of the base during the restoration process



Figures 19-20. General view of the left side of the upper grandfather clock case part. Conservation and restoration processes

Figures 21-22. General view of the right lateral side of the upper grandfather clock case part before restoration and in the process of half-cleaning of historical gilding from late painting with oil paint



Figures 23-24. General view of the right side of the upper grandfather clock case part. Processes of conservation and restoration of historical gilding

Figures 25-26. A fragment of the right side of the upper watch case part with solid multi-colour and multi-layered oil painting of the author's finish in the form of gilding before restoration and after the removal of multi-layer late painting of oil paint from the well-preserved author's gilding



Figure 27. General view of the front side of the upper watch case part of the architectural decor with solid multi-colour and multi-layer painting of the author's finish with oil paints before restoration

Figure 28-29. General view of the front side of the upper part – a vase of the watch case with solid multi-colour and multi-layer painting of the author's finish with oil paints before restoration and in the process of control clearing from late layers



Figures 30-31. General view of the vase of the upper watch case part after the removal of solid multi-colour and multi-layer painting of the author's finish with oil paints in the process of restoration after their removal and replenishment of local losses of primer-gesso

Figures 32-33. Sculptural decoration – vase of the upper watch case part after ground conservation and restoration of gilding





Figures 34-36. A fragment of the upper watch case part with solid multi-colour and multi-layer painting of the author's finish with oil paints before restoration; in the process of control clearing from late layers of oil paint and after the restoration of decorative gilding



Figures 37-39. Fragments of the architectural decoration of the upper watch case part – covers with solid multi-colour and multi-layer painting of the author's finish with oil paints before restoration and in the process of restoration and replenishment of local losses of primer-gesso and after conservation and restoration of gilding



Figure 40. Sculptural decoration of the upper watch case part after conservation and restoration of gilding



Figure 41. Historical ornamental and sculptural decoration of the upper watch case part after conservation, restoration and reconstruction of two types of gilding



Figures 42-45. Reconstructed lower clock case: side façade, front façade in wood and front façade of the lower grandfather clock case part after reconstruction of the base in wood and restoration of glossy and matt decorative gilding. Floor clock assembly after tinting gilding to match the colour of the historical



Figure 46. Grandfather clock in the White Dining Room interior of the Grand Peterhof Palace after conservation and restoration of the upper historical part, reconstruction and reconstruction of the lower-case part



Figure 47. White Dining Room of the Grand Peterhof Palace with a clock by Konrad Erbar after conservation and restoration of gilding and reconstruction of the lower-case part.