

STUDY ON THE RESTORATION OF A VIENNESE PIANO

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Abstract

Any intervention made on works of historical, artistic and environmental interest, in order to protect it and pass it on in its entirety, without eliminating the traces of the passage of time, is called a restoration intervention. Three different professions operate in restoration: the art historian, who should read the work and determine the choices on which to base the work; the restorer, who must make the restoration possible in the best possible way; the scientific expert, who can give correct answers to any uncertainties.

Key words: restore, piano, wood

INTRODUCTION

An acoustic piano has a protective wooden housing comprising the sounding board and the metal strings, which are strung tensioned in a metal frame. Pressing one of the keyboard keys a lined hammer (usually it is lined with felt) is determined to hit the piano strings. After hitting, the hammer rises from the strings, which continue to vibrate at their own resonant frequency. These vibrations are transmitted through a callus to the resonant plate which amplifies these vibrations more efficiently, transferring this acoustic energy to the nearby air considered physically coupled to it. When the flap is released, a damper stops the strings from vibrating, making the sound stop.

The essential elements for producing the sound in a piano are: the metal strings hit by the wooden hammer with a felt head, the gag on which the strings are fixed by means of strings of metal nails, and which transmits the vibration of the string to the wooden soundboard. has the role of transforming the vibration of the string into sound waves. The string alone produces an almost inaudible sound, due to its very small surface, and the resonant plate, which has a considerably larger surface, transforms the vibration of the string much more efficiently into sound, moving a large volume of air. ([http:// ro.wikipedia.org/Pollens](http://ro.wikipedia.org/Pollens) 1995, [http:// ro.wikipedia.org/Thiollet](http://ro.wikipedia.org/Thiollet), J-P, Derecichei, et al., 2013, Derecichei, 2014)

MATERIAL AND METHOD

Only the material of the work of art is restored, so that the author's message is not altered in any way. In order to protect the artistic authenticity, every possible intervention must be treated critically, being very important the elimination of any operation that is not necessarily necessary, therefore a case study must be made for each object to be restored. (www.descopera.ro). Any intervention made on works of historical, artistic and environmental interest, in order to protect it and pass it on in its entirety, without eliminating the traces of the passage of time, is called a restoration intervention.

The contribution of science, which is considered indispensable by all, is often inaccessible due to lack of funds (or too high costs). For this reason, in some restoration projects the scientific investigations are not fully integrated in the work, but are only an accessory, which only enriches the restoration operation, instead of contributing to the determination of the project. (www.incomemagazine.ro, Derecichei, et al., 2014, Derecichei, et al., 2015).

The restoration of the piano as well as the analysis and repair of the damaged elements to be presented was performed at Zaha Ciprian Nicolae individual enterprise.

RESULTS AND DISCUSSION

Depending on the analysis made, the restoration or reconditioning of the piano begins with the treatment for pests, conservation and isolation of the damage caused by them, in our case the restoration can be done. The piano was cleaned of the finishing materials in several stages. It started with the help of a scraper, with a belt grinding machine with abrasive belts with granules of 40 microns / cm square and made by hand with abrasive materials with granules of 40-60 microns / cm square in the first phase and later with granules of 80- 100 microns / cm square, no strippers were used because they are detached elements that will have to be glued in place and if stripping material enters those places it will need to be removed because the adhesive does not adhere to the strippers. After coarse cleaning, check the degree of damage to the veneer on the piano surfaces. Cleaning of the finishing material is done on all the wooden elements of the piano and is done on the length of the fiber of the material. The areas with detachment and / or impact problems are analyzed, the lack of material is marked and the repair of these areas will start depending on the degree of destruction. (fig.1) (Derecichei et al., 2017, Derecichei et al., 2018, Derecichei et al., 2018, Ganea, et al., 2010).

The restoration of the piano begins with the dismantling of the moving and connecting elements, ie the metal parts such as: hinges, wheels, shield, locks, etc., or used solutions for cleaning and degreasing metal elements.



Fig. 1. Keyboard (own source)

After checking all the parts, note all the defects that need to be remedied and the procedures to be followed depending on the duration and complexity of the work to be done (fig.1). The works are scheduled in a certain order and the next steps are taken. In all cases where a treatment of insect-infested wood is needed in combination with the preventive protection of the wood against insect attack, we apply an insecticide solution suitable for removing insects from the wooden structures of the objectives. Needle syringes were used for surface and deep impregnation of the wood, by spraying and brushing.

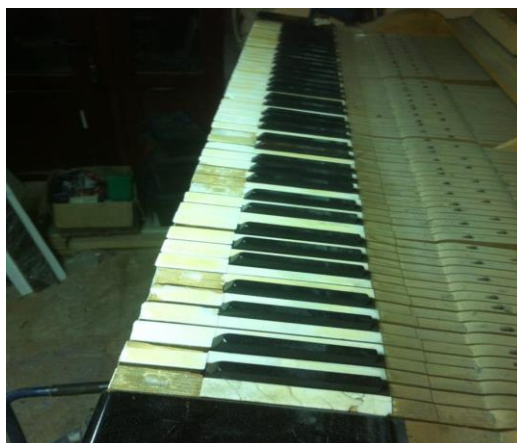


Fig.2. The flaps are complete but some damaged - no ivory elements (own source)

All flat surfaces that needed refilling were cleaned with the help of the manual cutter on which a tail mill with a cutting diameter of 6 mm to 18 mm was mounted, and with the help of guides the destroyed veneer was removed from the surfaces. Following the processing steps with hand and electric tools, the processing of surfaces for all piano components began. The piano housing was completely cleaned with abrasive materials with granulations of 120 microns / cm square and we started edging the edge of the piano with veneer following the direction of the fiber before cleaning and positioning it according to the initial shape. (Lucaci et al., 2013, Lucaci, et al., 2014, Lucaci, et al., 2016)

The next step was to clean and repair the keyboard, checking the flaps, hammers and other components. The hammers being numbered and cleaned of dust, the felt was cleaned from them and the felt was completely replaced from the keyboard housing (fig.2 and fig.3). For the damaged flaps, the ivory elements were replaced with others of the same age from another defective piano, these being adapted to the necessary shape and size, they being cleaned, rounded and bleached like the others.



Fig.3. Polishing of elements (own source)

CONCLUSIONS

By prolonging the life of old furniture, you become actively and responsibly involved in protecting the environment and, in addition, you make financial savings. In each old object that you want to bring back to life, case studies and necessarily insecticide treatments must be done, in

order to eliminate their pests. Restoring and reconditioning a variety of old wooden objects from musical instruments, picture frames, mirror frames to tinplate, weaving looms, various objects made over 100 years ago as well as church elements and personal museums I found that the treatment with insecticides leads to considerable prolongation of the life of objects. For large objects, it is recommended to place them in an isolated room and treat them with insecticide until the pests are finally controlled.

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