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WOODEN ANTIQUES IN EGYPTIAN PORTS, AN APPLIEDE STUDY OF THE TECHNICAL METHODS AND MANUFACTURES

Mahmoud Ahmed Darwish
Professor of Islamic Archeology
Faculty of Arts, Minia University

Abstract

This research deals with an applied study of the technical methods used in the manufacture of handmade wooden antiques in Egyptian ports. The scientific content of this research includes the manufacture of wooden antiques in Egyptian ports, and the wood used in this industry, which includes: poplar wood, which is of two types: red poplar, gray poplar, oak, Beech, Pine, known in the local market as Beach Pine, Musky, Teak, Buxus, and Ebony. Turkish walnut and Cupressus. Accordingly, wood is divided into five types: hard wood, soft wood, resinous wood, valuable wood, and wood from hot regions. The technical methods used in this industry include: assembling and interlocking, drilling, turning, inlaying, cutting, hollowing out, and coloring.

Wooden antiques in civil buildings include: exterior doors of houses, interior doors, doors of commercial and industrial buildings, windows and mashrabiyyas, ceilings, Aghaniyat cupboards, wall cupboards, Iwans and benches, barriers to roof openings, curtains and grinding machines. And wooden artifacts in religious buildings, which include: doors, windows, ceilings, pulpits, chapels, the benches of informers, the benches of reciters, and wooden domes.

This research highlights the great role of wooden antique artists who excelled in producing these antiques in the traditions that they inherited throughout the Islamic eras, which are considered an extension of the Mamluk, Ayyubid and Fatimid traditions with their Abbasid, Coptic and Egyptian roots. It will present woodworking with its applied and decorative methods and the diversity of its ancient wooden products and effects before the reader according to the diversity of the antiques, whether structural or portable, in both civil and religious buildings.

Keywords: wooden artifacts, artistic styles, civil buildings, religious buildings, Rosetta, Damietta, Alexandria.

introduction

Trade in the Ottoman era was two-fold: foreign trade, which included import and export operations between Rosetta and European ports, Ottoman ports, and the ports of Italian cities, the Levant, the Maghreb, and European countries, and internal trade, which included trade within Rosetta and with various Egyptian cities.

Egyptian cities such as Rosetta, Alexandria, Damietta, and Fuwa were full of commercial establishments that were considered large institutions in which the movement of buying and selling took place internally and externally. Goods came to them from France, Germany, Venice, the Turkish states, Syria, and North Africa.

Therefore, it was a huge warehouse for European, Levantine, Turkish, and Moroccan goods coming to it and to be exported from it. It was also a center for wood trade since the sixteenth century AD, when ships loaded with wood from Lebanon, Syria, and Europe would come to it, where it would be unloaded or transported to the wood warehouses in Bulaq.

Timber was imported from abroad by the Italians and some other European elements, and then they distributed it to Egyptian merchants from the people of Rosetta, who sold it to Egyptian merchants in other Egyptian cities, and committed themselves to supplying a share of this timber to the arsenal in Alexandria. Some Moroccans were active in the wood trade.

Many industries also remained thriving in these cities in the nineteenth century, as they had all the industries required for shipbuilding, such as the industry of sawyers who sawed large and heavy wooden blocks, in addition to the manufacture of boat bastings that were established during the reign of Muhammad Ali, and all sub-industries of blacksmithing, and carpentry, before navigation shifted from Rosetta to Alexandria. This industry, in its broad form, began to disappear from Rosetta at the time when its owners migrated to Alexandria, and it was replaced by the manufacture of fishing boats, which is one of the most prominent industries in Rosetta.

The availability of wood in Egyptian ports, whether local or imported, meant that the carpentry craft flourished and wooden crafts developed to the maximum degree of development. Wood - because it is one of the materials that is easy, simple to form and use - was one of the basic materials of great importance in works of architecture or arts, whether in buildings. Or furniture.

It was used in architectural elements in buildings, such as doors, windows, ceilings, floors, columns, stairs, cupboards, and iwans, in addition to movable elements such as pulpits, seats, Qur'an stands, reciters' chairs, and others.

Carpenters also contributed a large share - along with other artists and craftsmen - in enriching buildings and providing them with suitable and elegant pieces of furniture that reveal the spirit of the era and the extent of life's prosperity and progress. Wood was also an easy material for implementing many decorative methods due to its ability to be shaped and decorated using various methods that varied between engraving, turning, inlaying, and other industrial methods [1].

The excessive use of wood in various buildings was one of the factors that affected the buildings of Egyptian cities from a geographical and social perspective. The use of architectural elements made of wood, such as mashrabiyyas, also helped reduce humidity.

Recent studies have proven that the air passing through a wooden mashrabiyya loses some of its moisture by absorption by the wooden bars. When the mashrabiyya is heated by direct sunlight, it loses moisture to the air flowing through it.

These mashrabiyyas, which are made of turning wood and have narrow openings, protect the sanctity of the household from the eyes of strangers, so the woman can look through them freely without being seen by anyone.

One of the important elements in the facades of houses is the wooden batten that runs through the walls to strengthen them. It is used in longitudinal rows (kanats), and in between them are transverse rows (partitions).

The gradual protrusion of the walls outward was taken into account, based on wooden profiles, which are considered an extension of the ceiling beams or attached to it, and consideration was also taken to implement prominent ceilings with geometric decorations in gypsum or wood [2].

There are many elements executed with wood in civil buildings, including windows, which are the openings in the walls or ceilings, and they include windows, skylights, doors, and roof openings on the upper floors. The door openings are divided into two parts: the first of which is the rectangular openings, such as the doors of warehouses and agencies in homes, and doors with bars, in addition to the doors of commercial buildings. The second section is the openings in the doors of stables, stables, and the doors that close on the floors of houses, starting from the second upper floor.

The doors of homes and industrial commercial buildings varied, including internal and external doors, while external doors included wicket gates, gates without wickets, and doors to warehouses, agencies, and the mill, in addition to doors to stables, stables, and bathrooms. As for the interior doors, they are the ones that lead to the floors of the house or the rooms, and each of them has one leaf and, in rare cases, two leaves. As for the openings on which the windows and skylights are installed, they are characterized by being narrow and high on the ground floor, but on the upper floors they are characterized by being wide and consisting of two rows on each floor. It includes windows topped with skylights.

The architect was keen to use fillings in the shutters behind the windows, which were made with a wide turn to block those inside, as well as in the upper floors and skylights, which were blocked by a narrow turn or raised above the level of sight. Hence the need to block all the rooms, whether on the first floor or the other floors.

Thus, the shutters with slats or fillings, even if they are attributed to subsequent changes to the houses, were implemented in a sound manner in accordance with what was present in the houses before these changes were made.

Wood played an important architectural and constructional role in the ceilings of houses. The ceiling was placed on staples (cables) fixed to the wall above the wall. The benefits of the staples are increasing the level of the floors, supervising the streets from more than one side, and ventilating the rooms. The clamps are installed that hold the prominent ceiling, which Its position corresponds to the intersecting walls with the original walls of a wooden beam included in the construction, so it acts as a piston at times and as a tensioner at other times, in addition to performing the necessary tensioning task at the top of the piston.

The piston is often placed at an angle of ten degrees, in order to enable its outer edge to be raised, then a wooden block is placed as wide as the piston to support the two sides of the protruding roof, and beams are laid next to it that carry the floor of the protruding roof, and the walls are built with bricks of a thickness less than the walls located below them.

Wooden ceilings were not usually placed directly on the walls, but rather between them and the walls were prevented by wooden skirting boards surrounding the bottom of the ceiling to stabilize it. Most of the ceiling skirting boards are wide and three-quarters of them are at the top of the walls with wooden posts called (fodders) known to the craftsmen as (camels), and they are placed between the courses in a vertical manner. At equal distances and in the corners, the vertical posts are located close together, with a huge

wooden block rising horizontally with the courses, in order to increase stability.

The ceiling consists of bars, and sometimes their edges are beveled in the central area, which is called (sabbah), and a muqarnas is made attached to the ends of the bartoum, which is called (sole), and the visible parts of the walls between the bars are covered with rectangular pieces of wood called (harnai), and a short veil is made. The bottom of the jars covers the fodder, and the joints between the lining, the jars, and the awnings are closed with a vertical lining on the wall that is fixed to the bottom of the jars, called (qatroniya).

The architect took into account that each room be independent in its ceiling from the adjacent room, as we did not find a ceiling extending to cover two rooms except in the case of converting the two rooms into one room on the upper floor. On the contrary, the ceiling of each room runs inversely with the direction of the beams, unlike the adjacent roof (perpendicular to it), and with the ceiling of the upper or lower room.

This means that there are no two rooms adjacent to each other or above each other. Their ceiling bolts run in one direction. The goal of this is to regulate the distribution of weight on the walls. The architect was keen to implement expansion joints between each room and the other, which protects the house from any damage if part of it falls.

One of the important architectural methods in implementing house ceilings is the thinning ceiling method, in which the ceiling consists of two ceilings with a distance between them ranging from (0.50 m) to (1.0 m). The ceilings were implemented so that the upper represents the floor of the room, while the lower represents the ceiling of the room in which It is located below it, with the screws on the two ceilings running in the opposite direction. This helped in implementing decorations on the lower ceiling.

However, this method reflects the extent of the skill in implementing the ceilings of this room. The architect made two clamps, the first on the western wall and running towards the north, and the second on the northern wall, running towards the west, so that the two clamps meet at the corner where the western clamp is higher than the northern clamp.

While the western piston runs above the lower ceiling piston, at its southern end it forms an angle of ten degrees with the piston line, so that the two piston forms an architectural element that helps shift the weight of the angle to the sides. This is the same way in which the arch distributes the weight on the sides. Its top to the sides.

When implementing the large rooms or halls, care was taken to divide the roof into two parts using a beam resting on two columns. Some columns were implemented in the

building, for example the two columns that support the roof of the porch at the entrance to the Ramadan house.

Another method was used in large rooms, which was to implement an octagon inside the square of the room using screws that intersected with pistons to form an octagonal shape, with the aim of increasing the ceilings' load bearing and reducing the width. The beams that made up the octagon were often placed above the level of the panels, and the architect did not neglect to place a beam that divided the ceiling into two parts as well, and in Sometimes two rows of jars are placed on top of each other in opposite directions, then the boards are placed on top of the lower jars.

The use of stairs has spread throughout Rosetta buildings alike, including houses, to reach the different floors. The stairs are based on two beams (thighs) of wood or three beams for each hearth. The staircase is often lined at the top with wooden planks and the tops are built with steps. The beams are rarely covered with wood. Wood paneled bottom.

Song cupboards were among the elements that were widespread in all homes alike. Each house included at least songs, and the main rooms were assigned floors starting from the first floor.

They are distinguished by the fact that they occupy an entire wall façade, and in the middle of each of them is an entrance leading to the room. Sometimes the entrance is located at the end of the Aghani cupboard, depending on the location of the entrance on the wall occupied by the Aghani cupboard. The Aghani cupboard consists of a cabinet topped with a turning structure that reaches the ceiling or represents only a barrier. Turning was used in these structures, while interlocking and assembled gaskets were used in the cupboards.

The architect made sure that the Aghani cupboards were parallel to the ceiling beams, as the facade of the Aghani cupboard rested on one of these beams. In the event that it was necessary to violate this rule, the architect placed a beam bearing the face of the Aghani cupboard.

The architect took advantage of the presence of the Aghaniyat cupboards to implement a recessed entrance to the rooms, so entry was made through the door into a small hall the width of the Aghani cupboard, then veering left or right into the room, and the deviation was from the Dourqa'a (hall) then into a hallway and then right in the houses. In which the main rooms are located to the left of the Dourqa'a (hall), or the deviation is from the Dourqa'a (hall) to the right, then to the hall, then to the left in houses in which the main

rooms are located to the right of the Dourqa'a (hall). Sometimes the entrance is located in the middle of the Aghani cupboard depending on its location in the room.

I found wall cupboards on walls devoid of doors and windows or Aghaniyat cupboards. This is due to the fact that the wall with windows is slightly thick, in order to reduce the façade, and it is also occupied by windows and skylights.

Thus, it does not allow for the establishment of entrances to implement wall cabinets. Also, the presence of consistency was taken into account. Distribution of cupboards. Some of them were built with two walls in case the room had rooms and overlooked one facade. The doors of the rooms did not prevent the creation of cupboards in the walls in which these doors were located.

The Iwans are considered one of the architectural elements, and their place was at the top of the Dourqa'a (hall), and they usually occupied an area whose width was estimated to be as wide as the Dourqa'a (hall) itself, and the dominant feature was that it was confined between three walls. Some Iwans occupied the corners of the doors, as is the case. In the house of Ramadan, Al-Toujali, and Al-Missoni, the iwan overlooks the Dourqa'a (hall) with three arches supported by wooden columns.

We see that the iwan in the port houses is the takhtboush in the houses of Cairo, because the iwan was not limited in its architectural composition to a bench made of wood only, but rather its construction had several connections, the first of which is that it tops the Dourqa'a (hall), and the second is that behind it is a double window based on a column of It is marble and overlooks the street or courtyard on the first floor, while on the second floor there is a window with mashrabiyas behind it.

As for the benches, they were for seating, and they varied according to the spaces allocated for their residence, and their shapes also varied, including the benches with one side, two sides, or three sides, and sometimes a three-sided bench was implemented instead of the iwan, and the reason for this is due to the area of the Dourqa'a (hall) did not allow the iwan to be established.

The houses included many barriers made of wood, including the Aghaniyat cupboards in the upper part and the Iwans and deck barriers. The most important of these barriers are those that define the roof openings on the upper floors of the houses. They are divided into two types, the first of which is the plain barrier, which defines the square and rectangular openings. There are also the benches of informers, the benches of reciters, cupboards,

floors in homes, and floors for reciters as well. The barrier is divided into square and rectangular fillings that enclose the spokes of church columns. The second type is the municipal barrier, which is divided into three sections or three stations.

As for the lower station, it is in an Arabic shape, made of a beveled sink filling, and the middle station is made of square and rectangular fillings. The first was filled with cistern turning, while the second was filled with church turning. As for the third station, it is made of hollow coral holes and rectangles made of church holes .

Rosetta maintains a unique model of mills, represented by the Abu Shaheen Mill, which includes two orbits each with two grinding machines made of wood, each consisting of a transverse block (gayza) that carries the parts of the mill, which is a transverse beam connected to the Hermeas (column), It is an upright, square-shaped column that ends at the top with a finger that rotates in a hole inside the transverse block (gayza).

The large wheel (the great gear) is fixed to the Hermeas at its center horizontally and rotates around itself. The upper stone is fixed at the bottom with a small vertical wheel that in turn is connected to the Hermeas, and is connected to the column horizontally with a long arm of acacia wood (hood) is placed on the neck of the bull who runs the mill to move the column.

When the hood is moved, the Hermeas moves, moving the large wheel horizontally, and the small wheel connected to its teeth moves vertically, so the upper stone connected to it rotates. When the wheat is placed in the hopper, it falls between the two stones from an opening in the center of the upper stone, and is ground, where it falls on the wooden top to be sifted and packed, to be ready for use.

As for the wooden artifacts in religious buildings, they include doors, windows, ceilings, pulpits, shrines, the benches of preachers, and the benches of reciters.

The external doors consisted of two leaves, except for the doors of the courtyard rooms, which were made of one leaf. Iron nails were used on doors, and saber-type gaskets and square and rectangular gaskets were widespread. As for the interior doors, each of them consists of two leaves, and this type of door is limited to the doors of shrines.

The windows of the mosques varied, and we find among them the windows of the lower facades, which are large in size and topped with small skylights. This is in addition to the windows executed with turning and above the doors. There were also various internal windows above the entrances leading to the shrines and the windows overlooking the

inside of the mosque from the shrines.

As for the use of wood in the elements of religious architecture, the ceilings of mosques and shrines varied between wooden ceilings and domes. The ceilings were made with tapes resting on the walls, and a wooden (plaster) was placed underneath them on the surface of the wall. The tapes were covered with wooden panels. There are unique models of ceilings covered with panels on which decorations are fixed. With embroidered stripes or coloring.

Rosetta's pulpits in the Ottoman era retained their old designs. They were architectural elements that were not related in size to the area of mosques, and they were all built of wood.

There are examples of shrines in Rosetta mosques, including the shrine that is in the middle of the shrine room, and the shrine that consists of one side, as the shrine room is surrounded by three walls.

The mosques were distinguished by the presence of the benches of reciters, which are considered one of the architectural elements. As for the components of the benches, they include the base with a barrier on top of it, and the ceiling consists of bars and panels. Corbels were formed at the ends of the bars, and the ascent to the benches is done with wooden stairs, where the barrier was made of squares. And rectangles by turning.

As for the benches of reciters, they are distinguished by their small size and are divided into two parts, the lower part of which represents a box closed off from the four sides next to the roof, while the upper part represents the barrier, which surrounds the benches from the four sides except for the part designated for climbing to its roof. The benches are decorated with interwoven spikes, while the two sides each include square and rectangular fillings. As for the barriers, they are divided into horizontal and vertical rectangles by turning.

As for the domes, they rest on columns that carry arches that run parallel to the qibla wall and perpendicular to it, so that they form squares that hold the domes. The dome rests on an octagonal neck with a window on each side with a turn. The dome was covered from the inside with horizontal wooden panels, and decorations that included floral and geometric elements were executed on it with coloring.

First: wood

Wood is considered one of the most important raw materials because of the spread of its

natural sources in various parts of the world, and because of its technical properties and ease of operation [3]. Although Egypt relied on local wood such as sycamore [4], acacia, ficus [5], olive, tamarisk, palm [6], [7], buckthorn, and others [8], it resorted to importing from abroad [6], [9], [10], and southern Europe, Syria, and India were important sources to meet Egypt's need for wood [7], [10], [11] , [12], along with Sudan [6].

Rosetta has been a center for the timber trade since the sixteenth century AD, when ships loaded with timber from Lebanon, Syria, and Europe used to arrive there, where they were unloaded in Rosetta or transported to the timber warehouses in Bulaq [13], [14].

Due to the availability of wood in Rosetta, whether local or imported, the carpentry craft flourished and wood craftsmanship developed to the utmost degree of development. Wood - because it is one of the materials that is easy and simple to form and use - was one of the basic materials of great importance in reconstruction work, whether in buildings or furniture [15]. It was used in architectural elements in buildings, such as doors, windows, ceilings, floors, columns, stairs, cupboards, and iwans, in addition to movable elements such as pulpits, seats, Qur'an stands, Qur'an reading chairs, and others [12], [16] .

Carpenters also contributed a large share, along with other artists and craftsmen, in enriching buildings and providing them with appropriate and elegant pieces of furniture that reveal the spirit of the times and the extent of life's prosperity and progress [6]. Wood was also an easy material for implementing many decorative styles due to its ability to be shaped and executed. Decorations were made using different methods, including engraving, turning, inlaying, and other industrial methods in wood [11].

Types of wood

1. Poplar wood

It is used in engraving, inlaying, precise turning shapes, ceilings, and the benches of reciters. It comes to Egypt from Europe and Africa and is of two types:

- **Red poplar:** It grows in Europe and North and West Africa. Its heart is light red to yellow-brown and dark red, and its surface bark is white to reddish. It is soft, light, highly shrinkage, and has little elasticity. It is very flat and easy to nail. It is well polished, easy to color and impregnate. It does not tolerate pressure and does not resist. It is resistant to consumption and weather and humidity, and is easily susceptible to mold [3].
- **Gray poplar:** It grows in Europe and North Asia. It is a tree with white, light red, or

greenish-orange bark, soft, light, low in elasticity, highly shrinkage, little fermentation, and good coloring. It does not resist weather influences, moisture, or mold.

2. Oak wood

It is an important species of hardwood and grows in Europe, Western Asia, Turkey, China, the Himalayas, the mountains of Kurdistan, and the coast of North Africa, from Marrakesh and Algeria [17]. It is gray with a yellowish heart or brown with a yellowish heart, and the bark is white with a yellowish, or whitish grey. It is a wood that can be polished, durable and slightly flexible, with moderate shrinkage and easy to split. It has browning and polishing juice. It can be colored and impregnated and resists weather influences, water and rot [3], and it's expensive [2].

There is a type of it called shell-eared, which has a beautiful effect when painted, giving a shiny appearance that sparkles under the reflections of light on it [2], and has yellow dents and marks [2][1]. It is also dark olive [3], [19]. It is hard and has a soft hardness. It also tolerates humid climates without affecting its durability or strength [7], [20]. It is used. In the manufacture of doors, platforms, ceilings and the benches of reciters [23].

3. Beech

Beech wood is the preferred type for wood craftsmen, as it has a long lifespan. It is also easy to manufacture and create shapes suitable for all needs and household categories. It is also easy to manufacture furniture, and arched furniture shapes are made from it. It grows in India, some African countries, and the temperate regions of Asia and Europe [7], [17]. It is slightly reddish, or gray-white to yellowish-white, very hard, slightly flexible, highly shrinkable, well-polished, easy to color and impregnate, resists pressure and does not warp, and resists weather influences. It is not resistant to moisture and water.

Beech wood is among the best, as it is pure wood unlike other woods. In addition, it maintains the lifespan of the furniture for the longest possible periods. It is also dense and can withstand any factors around it. It is also odorless, and this is also a feature that makes it suitable for making furniture and interior wooden antiques.

Beech wood can bear some heavy weights, because it is not affected by heat, so you always find the house at a suitable temperature, and it is also easy to clean. One of its

[1] Cracks in wood resulting from gum, resin, or alkaloids are an organic secretion containing hydrocarbons from plants, especially coniferous trees, which have great value in the market for their chemical components and uses, such as varnish and gum, and as an important source of raw materials and organic composition.

advantages is that beech wood is not subject to decay like other types of wood. It can also be colored from time to time, and is given a shiny and beautiful color when painted.

There are some disadvantages and drawbacks to wood, as it is heavy in weight, making it difficult to transport easily, and it is not resistant to moisture.

It is used in various wooden works, such as barriers, pulpits, benches for reciters and informers, various turnings, windows, and mashrabiyyas [7], [18], [19], [20].

4. Pine

It grows in Syria, Asia Minor, and the Mediterranean region [7], [21], [22], and includes the yellow pine known as pine. It is distinguished by its light yellow color and strong fibers. It contains a large resinous substance [20]. It is criticized for its inability to be polished, the large number of knots and defects, and the failure to obtain a solid surface from this wood [7]. Resinous pine, known in the local market as Beach Pine, is considered one of the best conifers in terms of quality and beautiful shape, due to its good lightness and reddish-yellow colour. It is also a wood that can be polished to a great extent, and it is not affected by weather factors, especially those saturated with moisture. This makes it one of the best woods used in coastal areas [3], [7].

Musky is used for ceilings, floors, and binding work on cornices and doors, while Al-Azizi is used in pulpits, doors, recitation benches, windows, and the benches of reciters, in addition to crafts that do not require dyes that change the color of the wood. It is also used in architectural carpentry work.

5. Teak

Or rosewood, which is one of the woods that Egypt imports from India and tropical Africa. It is considered the most expensive and most valuable type of wood of all. It is distinguished by the multiplicity of its colours, the beauty of its softness, and the merging of its brilliance in a way that makes it like a homogeneous piece of precious metal. Its colors vary, as there is dark black striped with brown or white veins, and a veined brown colour. It has white stripes, and there are yellow and green. It is also characterized by its superior hardness and its ability to withstand great weather influences, especially cold and humid climates. It is distinguished by the fact that it contains an oily or fatty substance between its fibers, which allows it to live for a long period without being affected by the atmosphere or by insects that lead to its decay. It does not accept polishing and operation easily. It requires artistic skill, and teak wood is used in making pulpits, coffins [8], doors

and turning [3].

6. Buxus

It grows in Europe, West Asia, and North Africa. It is striped, sometimes smooth, satin, and hard. It is used in making platforms [3], [7], turns, and doors [23].

7. Ebony

It is imported from Sudan [6], [8], and it is one of the most valuable types of wood ever [24]. It is multi-colored with beautiful fibers mixed with samara, including pitch black, striped black with brown or white veins [7], [19], and brown veined with white stripes. It is characterized by its hardness and ease of breaking [17], [21]. It is the most durable wood and withstands weather conditions. It is also one of the most difficult woods to shape, and gives a reasonable, shiny, completely flat surface [7]. It is used in turning works, pulpits, and doors, and it is also used in inlaying with ivory, as its use causes color contrast [25].

8. Turkish Walnut

It is imported from Asia Minor, India, Syria, Lebanon, Kurdistan, Anatolia, and Europe [17]. It is a durable hardwood that accepts polishing and shaping easily [21]. It is characterized by its splits because its fibers tend to be a burnt brown or black color. They are cohesive fibers, and when painted, they give a good, completely polished surface, and are not affected [19]. It is affected by humidity and heat [17], and it includes two types: Turkish and Indian. It is used in doors, engraving and inlaying works, in addition to pulpits [23].

9. Cupressus

Cypress is a genus of tree plants belonging to the Cypress family. It grows in Turkey, southern Europe, and the eastern Mediterranean. One of its most important types is the Mediterranean cypress. Cypress contains volatile oil. It is an ornamental tree with about fifteen species. The height of the cypress tree reaches 30 meters. It is slow-growing and its wood is aromatic. .

The color of cypress wood is reddish-yellow or streaked with red [18], and its fibers are regular and fine. It is distinguished by its strength [21], durability, and extreme hardness, and its trees appear clearly on various Ottoman decorations [7].

Accordingly, wood is divided into five types:

- **Hard woods:** It is characterized by the density of its fibres, its high resistance and its flexibility over time. Among its most important woods are beech, walnut and teak.

- **Soft woods:** It is a term given to the wood of trees that are attributed to the bare-rooted plant group. The wood of this category is of commercial importance, and it is from the conifer family. Scientifically, it is considered non-porous wood taken from pine, pine, resinous, and other trees, and it is known as white wood.
- **Gum wood:** Its sap contains many resinous substances, the most important of which are pine and cypress.
- **Precious woods:** They are very hard woods that resist friction with their even texture grains. The most important of them are boxwood, rosewood, ashwood, and teak.
- **Timber of hot regions:** It is a term used to refer to woods with high porosity that are characterized by an abundance of pigmented materials and whose woods are colored and wavy [26], including oak, poplar, gum, castellum, ebony, and others.

Second: Artistic methods in making wooden antiques

1. Assembly and interlocking

This method is considered one of the first methods for installing various fillings, This method is called an association, and in Türkiye it is called kundekari [20], [27], the groove (mifhar) and ramus ('Armous) method and the tenon method prevailed [28], [10] [16], [19], [20]. This method is used in assembling the (vertical) and (horizontal) heads in doors, windows, etc. [21], [29], [30],[31, [32], to make a groove with a drill on one side of the thickness of the wooden filling, when installing the fillings, they must not be nailed or attached strongly to the bone, but rather they should be free to move so that they do not crack when shrinking.

A. Fillings

The artist made sure to have a lot of corners with the fillings to help him attach them easily to each other. The parts of the filling are called: the square filling (buqga), the horizontal rectangular filling (tareekh), and the vertical rectangular filling (timsah), in addition to the fillings in different geometric shapes. The carpenters were keen to Leave an appropriate clearance in the throats to help the wood expand, without causing any disturbances in its fibers. This is because wood is affected by regular changes in the degree of humidity, and its fibers have the ability to contract and expand.

Also, the method that is used in designing the fillings is compass and thread, where the center is determined and the circle is formed that will include the shape to be executed,

then a nail is fixed in the center with a thread attached to it to form the different lines that make up this shape. This method is called (carpentry drawing) and (thread striking). Geometric fillings also spread in various forms, and this method was known in Egypt in the Fatimid era [30], [33].

B. Joining pieces of wood

The interlocking flaps have spread widely, and they are interlocking bottles (qenanat) called peel (qishr), and the difference between them and interlocking fillings is that in the case of fillings, the bottles are at the level of these fillings, and tapping is carried out in the bottles, and sometimes the fillings are higher than the bottles and their edges are beveled. The tubes are fixed to the surface of the wood, and the ends of the bottles are slanted to form angles.

Sometimes the clouds are executed together without a ground and are called (Abu Janzir) or (Bees Nest). As for the Abu Janzir, it is a geometric shape that emerges from the center of the clouds, forming rays that meet with other shapes. It was incorrectly called (Abu Janzir Fountain). As for the bee's nest, it consists of interlocking hexagonal, zig-zag shapes, and it was mistakenly called a zigzag stronghold [7]. The artist was able to produce many geometric elements by assembling and interlacing fillings or clouds, such as shapes [23]:

- Al-Ma'eqali: It is the method of arranging the fillings in square or rectangular shapes at an angle of (90) degrees, (60) degrees, or (30) degrees, and it includes:

- Upright Ma'eqali: It consists of longitudinal and transverse fillings separated by other square fillings at a 90 degree angle.
- Slanted Ma'eqali: It consists of long and transverse rectangular fillings separated by square fillings diagonally at an angle of (45) degrees.
- Hooked Ma'eqali: It consists of rectangular fillings wrapped around a square filling, and the rectangular fillings end at an angle, so the shape appears to resemble a cross.
- half on half Ma'eqali: It looks like bricks.

- The Mafroukas

The mafrouka is a decorative unit that is a right square or at a 30-degree angle, and its specified base starts from a third of the side of the square that includes the entire filling. The inclined squares start from half a side of the square with the original filling or from a third of it, and the sides of the square are in the shape of the letter (T), and include the

oblique mafrouka and the upright mafrouka.

- Star Patterns

It is considered one of the basics of geometric Islamic decoration, because of its spirit, interconnectedness, and interconnectedness that is evident in the beautiful overlapping twist in its geometric structure. It is an artistic unit consisting of three distinct parts, regardless of the complexity of the method of combining them.

For various reasons, perhaps foremost among which is Muslims' interest in astronomy, stellar shapes of various types occupied the forefront among the common geometric decorations in Islamic art, until the sixth century AH came to add to the list of stellar shapes a new shape that no other art had ever invented, which is the star dish.

The Star Pattern is an integrated decorative design composed of star shapes with pointed ends and polygons. These shapes revolve around a central star shape. In its first appearance, it appeared as a decorative unit consisting of a six-pointed star surrounded by six five-sided fillings on its edges.

The Fatimid artist arrived at this innovative decorative form in the midst of his quest to give the wooden fillings that made up the pulpits and pieces of furniture a character of artistic beauty, after he relied technically on the method of combined fillings to overcome the expansion and contraction of wood in the different seasons of the year, which led to the curvature of the furniture pieces. It is distorted, especially if the wood is of ordinary types.

This means that the first appearance of the Star Pattern was purely a response to the aesthetic decorative tendency inherent in Islamic art, but this appearance soon elevated itself to the point where the star plate became an intended decoration for its own sake and not just a beautiful shape for a utilitarian and functional purpose.

The Star Pattern begins by drawing a square, with a circle inside it that touches its sides, and then the division begins. The circle is divided to form a star shape after bisecting it and drawing the strings and arcs.

In the middle of the Star Pattern decoration, we find a central star with serrated ends, and the number of these ends may reach (24) pointed ends. This single central element is known as a gear, the Star Pattern has only one gear.

The second element is the kindat, which is singular kinda, which is a six-sided filling that begins with a square base from which two rectangular sides emerge and ends in the shape of a sharp-angled triangular head. This the kindat forms the outer border of the shape of the

star dish, and the number of the kindat in each dish is equal to the number of ends of the gear.

As for the last decorative element, it is the tonsils, which is singular, tonsil (louza). They are small fillings that fill the space between the gear and the kindat. The tonsil (louza) consists of a quadrilateral shape corresponding to the ends of the gear in a radial form, and their number in the star plate is equivalent to the number of the kindat.

Star Patterns have many sizes, starting from octagons and up to (32) sides. The essence of the Star Pattern design, after its complete geometric maturity, is a radioactive image that moves in a specific direction but is fixed in the center of the decoration and rotates in a circular orbit whose axis or pole is the star gear. Its largest fragments are the kindat and the smallest are the tonsils, and the Star Patterns communicate with each other through the kindat, which plays the role of elements of separation and connection at the same time. This is another artistic engineering genius that gives the Star Pattern decoration the infinite character that distinguished the spirit of Islamic botanical decoration in particular.

The Muslim artist enhanced the decorative character of the star plate by relying on the contrasting colors of the fillings. First, he resorted to using wood of different shades of color, ranging from brown in shades to ebony black. Then he followed that by using ivory fillings, especially in the shield and the small tonsils, and the Star Patterns were covered with a rough dress. Of the decorative richness when the artist resorted to inlaying various fillings sometimes with ivory and with mother-of-pearl at other times in the context of enhancing the color character of the star dishes.

But these decorative units, which originally arose in the arms of a functional and utilitarian purpose, quickly turned into a decorative element used brilliantly in decorating artistic products other than wood, and it appeared in almost all applied arts products.

The eight- and twelve-sided Star Patterns have spread throughout Rosetta's patterns, especially on pulpits and the ceilings of houses like the Al-Amasyli house.

- Stars and various geometric shapes

It consists of triangular, quadrilateral, pentagonal, hexagonal, heptagonal, and octagonal fillings and star shapes, and triangular, quadrilateral, hexagonal, octagonal, dodecahedral, hexagonal, and twenty-four-sided shapes. As for the hexagonal shapes, some of them consist of six fillings (lozenges), the hexagonal shapes divided into six sections by the syringes (Srouh hexagon), and the hexagonal shapes. Two of which are located on either

side of a six-pointed star (a hexagon), as well as the eight shapes, four of which surround a six-pointed star (a hexagon), or surrounded by four five-pointed stars and four kindat, or they form rays alongside the various shapes that confine rays that extend to meet the shapes. Others include (Abu Ganzeer), the shapes of the frog, the alley, the dagger, and the crindaz with frames and zigzag shapes, in addition to the square and rectangular shapes and fillings with fillings and stripes.

2. Engraving on wood (Wood Carving)

Engraving and wood carving are fine plastic arts that combine multiple skills, including a broad and clear imagination, sleight of hand, and a precise sense of sight, with a balance between the work of the mind, eye, and hand. Carvers use different materials to show the beauty of this wonderful art.

Engraving on wood requires knowledge of things, which we summarize as follows:

1. Familiarity with the different characteristics of the types of wood used: the direction of the fibres, hardness and softness, the ability to bend and crack, and so on, to determine their suitability for carving according to the type of wood suitable for its designs.
2. Identify the types of engraving and shaping to enable the formation of its units in accordance with the type of wood and the required purpose.
3. Study the various models used to identify the type of pieces required to be developed for drilling designs.

The method of engraving wood [8], [34], [35] in the buildings of the Ottoman city of Rosetta was represented by the execution of inscriptions, stalactites, and rugs, which are lines executed with a diagonal bevel, like a channel, with a section like the letter (U) or (V). Sometimes bastoum is executed by the sabrasa method, which is to stack the panels vertically, horizontally, or diagonally, with the separations between them visible. Bevel the edges like the letter (V), along with the charms.

The methods of engraving on wood included: notching, recessed and protruding engraving, oblique chamfering, and using engraving to implement perforation of fillings in preparation for assembly and interlocking, in addition to implementing the drill as well. As for notching, it was used to implement lines on the edges of various fillings and the structures of wooden artifacts in general, and recessed and protruding engraving was used to implement geometric and written elements. Use slanted bevels on the edges of the fillings and implement stalactites [15], [36].

As for the method of implementing decorations by engraving, these decorations are drawn on the wood, then the floors are cleared so that the element becomes prominent, and this method is called (Daq Al-Owaimah).

Types of stereoscopic engraving:

- **Flat prominent engraving:** The height of the engraved decorations reaches about (0.5 cm) and is often found in the design of medals and Islamic engraving.
- **Engraving the prominent shape:** In it, the height of the decorations and shapes engraved on the floor increases by more than half (0.5 cm) and reaches about (7 cm), provided that the floors in shape are all equal and of the same depth.
- **Prominent engraving:** It is like prominent, formed engraving, but it is more prominent and deeper on floors that must also be of equal depth. The heights of the engraved decorations may reach a frame (25 cm) to give a stronger effect. This type of engraving is suitable for use in places out of sight.
- **Stalactites:** A type of decoration that the Arabs developed, and it became one of the features of their art. It has multiple images, some of which resemble limestone deposits hanging from some caves, and some of which resemble ant nests or beehives. The origin of the stalactites is the niche used to move from the square to the level on which the dome is built. Buildings distinguished by their domes.
- Currently, this art is limited to decorations that can be hung from ceilings, such as lighting centers, places for hanging chandeliers, or the sides of large, comfortable seats. The Syrian Arabs inherited this art from those who preceded them from other nations, and developed much in it until it became what it is of renewal and innovation.
- **Intrinsic engraving:** Unlike prominent engraving from the previous types, in which the engraved decorations are inward while leaving the floors as they are without engraving or engraving. The ancient Egyptians resorted to using it extensively in temples and tombs with little light to help the shadows become clear and last a long time.
- **Engraving the stereoscope:** It is the most accurate type of engraving and includes engraving on blocks with the intention of shaping and solidifying them. It is most often used in sculpture and making statues.

3. Turnery

Turning: turns the tree, turning it into a lathe, removing its peels and changing it with a lathe - the lathe is an active noun, and lathe is the craft of a turner, and the lathe is the one

who carves wood on the lathe and it comes out as a round cone [18], [37]. Thus, turning is wood made into conical shapes on a lathe [17], [32]. It consists of turned spokes. The spoke represents the basic element of the cartridge, along with the notches that connect those spokes. The spoke consists of a conical shaft whose length or dimensions cannot be determined, as its size varies depending on the purpose for which it is made. There are There are many types of spokes, including square, hexagonal, octagonal, spherical, or oval. These shapes are called "piles." The ends of the spokes are each called a "hopper." They are connected to the stems in a vertical position, but if it is inclined, the stems are used at an angle of (45) degrees [8], [15], [25], [36].

It has been incorrectly stated that turning is done through a small conical piece that represents the communication elements between the turning units [20]. However, this method is used to install masts, heads, and posts in doors, windows, or other antique structures, and it takes the place of nails, where the parts are pierced together and a beech wood (conical) clamp is installed. Rather, the method of tapping and tenoning is used, as tapping is done with the spokes and the tenon with the sprockets, and tapping cannot be done. The chickens are small because of their small size. As for the two ends of the drums at the hopper, they have a tongue inserted into the hole in the slice through which the drums are stuck. This means that each drum, no matter how large it is, has only two tongues, and each hole has a number of holes that are proportional to the number of chickens attached to it.

Use a click-and-tongue interlock to connect different turning parts to each other or to the outer frames.

The turning industry flourished in Rosetta in the Ottoman era, and two main types became widespread, the first was the auspicious turning (Maymouni) and the second was the tank turning (Saharegi):

- **Turning Maymouni [2]** [32][2] **(the precise):** It is the turning of the precise in which the space of the space between the acres is equal to the area of the acres, meaning that it is "empty as much as a million" or less than it, and sometimes wider than it in the case of adding intersecting sheets within the shapes (empty) between the spokes or without space, and turning Maymouni (the precise) includes several Species:

[2] Al-Maimoni or Al-Mamouni carat: A type of carat that has been known in Egypt since ancient times, and was widespread in both the Mamluk era.

- **Turning Maymouni (diagonal square):** It is the one in which the spokes take the shape of a square (the acre) and are inclined (45) degrees, and the square spaces between the spokes are equal to the size of the spoke or less than it.
- **Turning Maymouni (empty):** Its spokes run horizontally, and their intersection produces square spaces. The shape of the acre is spherical. It has been incorrectly called the "empty cross." It is more correct to call it just "empty," and its name as "milian" comes from the fact that it is supported by two intersecting pillars like a cross, and it is in a state that it is devoid of these two pillars. It is not called a cross, but it is an empty auspicious sign [20], [23].
- **Turning Maymouni (cruciform and semi-cruciform):** These two shapes appeared together, and they are the result of adding one or two crossed chicks to the empty turning maymouni, and that is in each square confined between every four acres (spikes). In the case of the presence of one chick, it is called (half-crossed), but in the case of two crossed chicks, it is called (crusader).
- **Turning Maymouni (hexagon):** Its spokes may be vertical or horizontal, and the spoke consists of two buckets and a number of piles, or just one pile, adding one more instead of the two buckets. When the spokes are placed, the buckets are alternated with each other, so that the space enclosed between every six spokes forms a hexagonal shape, and each pile is considered the center of a hexagonal shape. Also, the balls are spherical or hexagonal, and there is a type of hexagonal Maymouni turning called (Abu Sharwal) [18][3], in which the chicks have curved protrusions that form arcs around the spherical balls, so that each ball becomes surrounded by six arcs.
- **Turning Maymouni (superior):** It is the one whose spokes take different shapes other than a square or a ball. The unloading method was used to make the spokes with spokes, as several types of this turning are produced:
  - Turning is the top with hexagonal balls with triangles enclosed between them. It was formed by a wide plug in which hexagonal shapes were cut, with triangular shapes between them, so that when they were connected together, they produced hexagonal shapes with triangles around each one of them, and sometimes the chicks were connected in the shapes of trapezoids or parallelograms.
  - Turning the hexagonal (curved) joint, long hexagonal shapes are made, and when the

[3] Abu Sarwal or Abu Sharwal is a type of pigeon that had feathers on its legs that looked like trousers.

spokes are connected to the sprockets, they also take the long hexagonal shape, and elements of four hexagons are formed that confine an octagonal space between them, and this type is called the octagonal ring.

- **Turning Maymouni (called Al-'Arnas or Al-'Arnos)** [37][4]**:** It is made of small stems not tied to branches, and is in the form of a few or columns with a base, a body, and a crown.
- **Turning Maymouni (Al-Kanaesi):** It consists of spokes that are not attached to the branches and are upright and octagonal with the upper and lower frames. It differs from the arnos in that it consists of two or more shapes.

B. Turning Saharegi

It is one of the dams with sectors larger than the turning Maymouni, with some sectors reaching 5 cm in thickness and with lengths reaching two meters or more. It is distinguished by the fact that the spaces between the balls that make up its spokes are much wider than the turning Maymouni, as some of them exceed ten centimeters, so it is Empty is wider than million, and this is the difference between it and Maymouni, which is called empty as much as million. Turning Saharegi is used for wide windows in mosques or on the first floors of houses, which are the men's floors, as they are devoid of mashrabiyyas. It is also used in the skylights above the windows on the upper floors of houses, to compensate for The decrease in light caused by turning Maymouni.

Turning Saharegi includes several types:

- **Turning Saharegi (Ma'eqali):** It includes several types, the first of which is the oblique and upright, which are spherical or oval.
- **Turning Saharegi (Square):** It is upright at a (90) degree angle or inclined at a (45) degree angle, and has a beveled square top and its face turns into an octagon.

4. Inlaying

Inlaying or downloading depends on highlighting the symmetry in drawn shapes by inlaying wood with various materials such as mother of pearl, bone, tin, copper, and even silver, by engraving precise lines representing the required drawings, then filling them with the required material.

The method of inlaying on wood was borrowed from mosaic works in the Byzantine era, and differs from the art of engraving, as types of wood, ivory, mother-of-pearl, and bone

[4] Arnas or arnous: a type of bird like pigeons.

are used in colors different from the color of the engraved wood. Or with different types of precious wood, such as rosewood, pear, and hornwood, which are different in color and type, and this color shows the beauty of the decorative elements.

Bone, tooth [18][5], and mother-of-pearl [37][6] were used to decorate wood in the buildings of the city of Rosetta in the Ottoman era. Engraving was used in the pieces designated for adding precious materials [38]. Then the spaces resulting from engraving were filled with these materials, and the artist leveled the face of the masterpiece after inlaying so that the surface of each of them was equal [39]. The areas that are excavated for grafting are called "Mistric" or "falto" [20], [23][7].

Many applied antiques, such as doors and Aghaniyat cupboards, have been made using the mother-of-pearl shell method. It is a hard material with an attractive luster and represents the hard armor of some sea slugs. The inner layer is used, which is characterized by its softness and luster. Woodwork decoration with mother-of-pearl mother-of-pearl is made with two types of inlaying: the first is partial inlaying and the second is total inlaying.

As for partial inlaying, it is represented by one method known to the Turks as "Kakma", in which the drawing for the decorations is prepared, then the shell units are cut with the other units for inlaying, then the drawing is transferred to the filling and the decorations are engraved, taking into account that the depth of these cavities is the thickness of the shell units, and the surface is The wood filling is at the same level with the surface of the mother-of-pearl places.

As for total inlaying, it is represented in two methods:

The first method: "Yabsterma", in which the required drawing is also prepared in advance and the shells are prepared according to the required decorative elements. The wooden surface is completely engraved, then the shell units are glued to the engraved floor. Sometimes the spaces between the shell units are filled with other materials such as: ebony and bone, taking the appropriate shapes for these spaces. Or they are filled with paste and

[5] Tooth or ivory: It is the bone of an elephant, and nothing other than the tusk of an elephant is called ivory. If the tusk of an elephant is cut transversely, intersecting circular lines appear in it, forming vertical shapes with rhombuses with curved borders. This is what distinguishes between real ivory or the tusk of an elephant and other types of bone. Whether it is made of dentin or otherwise, dentin is also softer in texture and more flexible than other types of bone.

[6] Seashells are marine animals. Their shells are used after being cut into small parts.

[7] It is one of the roads that is rarely used in Cairo buildings.

these elements are glued directly to the surface without drilling, they are called “tarsi” or studs.

The second method: “Capalma” or paneling, which is a complete covering of the wooden surface of the masterpiece, where the decorative shell units are glued, each piece next to the other, so that the entire floor disappears, and sometimes some decorations are carried out by engraving on the surface of the shell.

5. Cutting and unloading

It is called hollow engraving, which is the engraving of hollow shapes with a jigsaw and engraved at the same time so that its units hold together. It is one of the methods that prevailed in decorating buildings in the city of Rosetta in the Ottoman era, and it needs to be executed on paper or on wood panels, where the artist defines the decorative shapes and then... Hollow out these shapes by removing the flooring separating the decorative elements, taking into account that the hollowing is in the direction of the wood fibers so that they do not break.

Cutting and hollowing out were used in the execution of columns, arches, columns, merlons that crown pulpits, lobed domes, spiral shapes, cupolas, and floral and geometric shapes.

6. Coloring

The method of coloring is one of the methods that was widely used to decorate wooden antiques in the city of Rosetta in the Ottoman era, when many colors were used, such as brown, white, red, green, purple, and gold.

This method was done by treating the wood before coloring it in two ways: the first was covering the surface to be decorated with a diluted solution of mastic and oil, while the second method consisted of covering the surface to be decorated with a thick layer of wax and oil, then the colors used to color the wood were dissolved in egg yolks dissolved in wine. Or dissolved in glue [23], coloring was used to create floral decorations on ceilings and Aghaniyat cupboards. The decorations executed by coloring took many forms, including floral and geometric decorations and writings, in addition to other shapes such as ships and mosques [40].

Conclusions

- This research dealt with an applied study of the technical methods used in the

manufacture of wooden antiques in Egyptian ports. The scientific content of this research included the manufacture of wooden antiques in Egyptian ports, and the wood used in this industry.

- Woodcut artists use: poplar wood, which is of two types: red poplar, gray poplar, and oak, Beech, Pine, known in the local market as Beach Pine, Musky, Teak, Buxus, and Ebony, Turkish walnut and Cupressus.
- Accordingly, wood is divided into five types: hard wood, soft wood, resinous wood, valuable wood, and wood from hot regions. The technical methods used in this industry include: assembling and interlocking, drilling, turning, inlaying, cutting, hollowing out, and coloring.
- Wooden antiques in civil buildings include: exterior doors of houses, interior doors, doors of commercial and industrial buildings, windows and mashrabiyyas, ceilings, Aghaniyat cupboards, wall cupboards, Iwans and benches, barriers to roof openings, curtains and grinding machines. And wooden artifacts in religious buildings, which include: doors, windows, ceilings, pulpits, chapels, the benches of informers, the benches of reciters, and wooden domes.
- This research highlighted the great role of woodcut artists who excelled in producing these antiques in the traditions that they inherited throughout the Islamic eras, which are considered an extension of the Mamluk, Ayyubid and Fatimid traditions with their Abbasid, Coptic and Egyptian roots.
- The research presents woodwork with its applied and decorative methods, the diversity of its products, and its ancient wooden effects before the reader according to the diversity of wooden artifacts, whether architectural, structural, or transported in civil and religious buildings alike.
- It was used in architectural elements in buildings, such as doors, windows, ceilings, floors, columns, stairs, cupboards, and iwans, in addition to movable elements such as pulpits, seats, Qur'an stands, reciters' chairs, and others.
- Carpenters also contributed a large share - along with other artists and craftsmen - in enriching buildings and providing them with suitable and elegant pieces of furniture that reveal the spirit of the era and the extent of life's prosperity and progress. Wood was also an easy material for implementing many decorative methods due to its ability to be shaped and decorated using various methods that varied between engraving, turning,

inlaying, and other industrial methods.

- Due to the availability of wood in Egyptian ports, whether local or imported, the carpentry craft flourished and wood craftsmanship developed to the utmost degree of development. Wood - because it is one of the materials that is easy and simple to form and use - was one of the basic materials of great importance in reconstruction work, whether in buildings or furniture. It was used in architectural elements in buildings, such as doors, windows, ceilings, floors, columns, stairs, cupboards, and iwans, in addition to movable elements such as pulpits, seats, Qur'an stands, Qur'an reading chairs, and others.
- Carpenters also contributed a large share, along with other artists and craftsmen, in enriching buildings and providing them with appropriate and elegant pieces of furniture that reveal the spirit of the times and the extent of life's prosperity and progress. Wood was also an easy material for implementing many decorative styles due to its ability to be shaped and executed. Decorations were made using different methods, including engraving, turning, inlaying, and other industrial methods in wood.

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