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OIL LAMP CANDLESTICKS FROM THE INDIAN MUGHAL ERA: ARCHAEOLOGICAL, ARTISTIC AND COMPARATIVE STUDY

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Abstract:

This paper aims to examine a means of lightning known during the era of Mughal emperors in India called the oil lamp candlestick in terms of name, significance, and artistic style. This artifact combines the function of the candlestick and the oil lamp. The paper studies the patterns of this form of candlestick by investigating the styles available in international museums. There are several styles of this type of candlestick, including a style whose bottom part is detached completely to turn from an oil lamp into a candlestick, another whose oil container is removed to achieve the function of the lamp stick, and a third one whose oil container has a hole for fixing a candle. The study investigates the origin, uses, and spread of this type of candlestick in India. It highlights the function, dimensions, form, and functional compatibility of oil lamp candlesticks. It also illustrates the effect of the local Indian environment on oil lamp candlesticks, including the form and decorations of applied artifacts in the Mughal Indian era, as well as in relation to religious establishments. Various manufacturing methods were adopted, such as casting, welding, hammering, and perforating. Additionally, brass was used as a basic material for making this type of candlestick. The study highlights the impact of the technical unit in the Mughal Indian era on designing oil lamp candlesticks, as shown by the influences of the shape and decoration of the applied artifacts, including trays and jugs, and the architectural buildings. Furthermore, it compares the remaining styles of oil lamp candlesticks with their illustr-ations in manuscripts.

1. Introduction

Metal industries evolved significantly in the era of the Muslim sultans in India thanks to their care to art and Muslim and Hindu artists, the availability of raw materials, and the well-established metal artistic traditions in the province [1], denoting the long Indian fame in manufacturing the different forms of metal and golden utensils [2]. At the time of Indian Mughal emperors (932-1273 AH/1526-1857AD), many applied metal artifacts, including trays, phiale, jars, and boxes, were made. Additionally, many arts were inherited from that era. Lightning means were important and varied in the Mughal era, especially candlesticks and oil lamps. Although candlesticks spread at the time, a few remained, particularly if compared to Iran [3]. The remaining styles show the development and creativity of the Indians in making candlesticks, the emergence of this type of multifunctional candlesticks, and the integration of the function of the candlestick and the oil lamp in one artifact. The previous studies generally reported this type of candlestick, such as *Mark Zebrowski (1997): Gold, silver, and bronze from Mughal India*, illustrating this type of candlesticks. Other studies tackled Indian metal artifacts, especially candlesticks and oil lamps, such as Swarup, S. (2007). *Mughal Art, a Study in Handicraft*. This study is different in discussion, objectives, method, and results. It focuses on studying the styles and forms of this type of lighting, establishing its foundations, causes of emergence, and spread in India. It aims to study these multifunctional candlesticks and the influence of the Indian artistic style. It explores different styles of oil lamp candlesticks dating back to the Indian Mughal era preserved in several international museums. Many of these museums were contacted to get pictures of the styles and access previous styles to determine the origin of this type and study the influence of architecture and arts on this type of candlestick.

2. Methodological Study

2.1. *Nominations and connotations*

This artifact combines two names. The first *"shamʿaīdān"* consists of two parts, namely the Arabic "*shamʿa*" and the Persian "*dan*" [4], meaning a place. Thus, it means the place of putting the candle[(a)] [5]. It is a means of portable lighting. Candlesticks were used as a means of social lighting for the inner lighting of palaces, houses, homes, inns, and shops. They were sometimes used as inner lighting for architectural establishments based on candles [6]. The second is the oil lamp or the "*miserāgā*," a bright lamp lit at night with a wick [7]. It is a means of

portable lighting at night developed for lighting the inner part of a building [6]. This type of Indian lighting in the Mughal era was known as the can-dlestick or lighting lamp. It consists of two parts, i.e., the base and the upper part. The lower part, namely the base, is cylin-drical or bell-like to act as a candlestick. The upper part, which is unfixed, is a concave container for storing lighting oils. It is sometimes installed upside down to appear as the base in a hollow dome, where the candle is fixed on the top [3]. In other styles, the upper part is completely removed.

2.2. *Artistic styles*

There are various artistic styles of oil lamp candlesticks that can be categorized into four styles:

2.2.1. The 1st style

In this style, it consists of two parts. The lower part/ base (candlestick) is bell-shaped and ends with the place of the candle, whereas the second part is the short column topped by the place designated for putting the oil, and it has seven holes. The candlestick is detached from the place of fixing the candle above the lower part. The upper column is installed, and the part designated for the oil lamp is added. For example, a brass candlestick with an oil lamp was kept in the Salar Jung Museum, Hyderabad, dated to the 17th century. It measures 44.4 cm high, but the base that performs the function of a candlestick is 14.4 cm high only. It consists of two parts: The base performs the function of a candlestick, and the upper part is an oil lamp. The lower part has a bell-shaped base that ends with a circular tray beneath, following the form of the Indian Mughal trays. The bell-shaped base is installed in the middle of the circular base and crowned by a raised circular ring whose diameter is less than the base topped by a smaller bell shape. It ends with the hole designated for fixing the candle, which is used to connect the upper part therein. The second (upper) part is the oil lamp and consists of a cylindrical neck that narrows upward. It has four raised metal rings on which the opening for storing oil is installed and has seven openings for putting the wick, fig. (1-a). Another sample in Salar Jung Museum, Hyderabad, is dated to the 18th G century. It is 32.5 cm high, and the base or candlestick is 12.5 cm high. It has the title of King Imadul Mulk as Sarkar Nawab Imadul Mulk'. It follows the same previous form, consisting of two parts: The base (candlestick) and the upper part (oil lamp). Above the candlestick appears the detached place, and the upper part is removed to put the candle and achieve the function of the candlestick, fig. (1-b). A third sample preserved in the Spurlock Museum(b) is dated to the 19th G century. It measures 32.5 cm high, and the lower base is 7.5 cm high. It resembles the former style and consists of two parts: The base (candlestick) and the upper part (oil lamp). It adopts the shape of the previous style and consists of two separate parts; the candlestick topped by the place of putting candle and has the place of fixing the upper part, namely the oil lamp, fig. (1-c). This style was produced continuously in India, with many examples and styles. For instance, a brass candlestick preserved in the National Museum in Delhi and dated to the 19th century follows the previous form and measures 35 cm high, and the base is 15 cm high. It consists of two parts, the base and the upper part dedicated to the oil lamp, with seven holes for the wick. At the top is the place for detaching the upper part to act as a candlestick, fig. (1-d). Another brass sample in the same museum, dated to the 19th century, measures 39 cm high and adopts the same form as the previous ones, fig. (1-e).

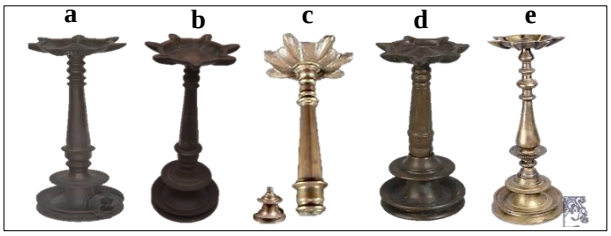

Figure (1) an oil lamp candlestick in India; **a.**, 17th, **b.** 18th (*Salar Jung Museum*), **c.** 19th (*Spur lock Museum*), **d.** & **e.** 19th (*National Museum*), Delhi

2.2.2. The 2nd style

In this style, the oil lamp candlestick consists of two parts. The first part includes a bell-like base and a long body fixed to the base. The other part is the concave container for putting the lighting oil and the wick, which is inassimilable. In the middle, it contains a domed top that turns into a deep hole when the container is installed upside down. This style has a long column with raised circular rings. For example, a brass oil lamp candlestick preserved in the Khalil collection, dated to the 16th century, in the reign of Emperor Akbar, measures 112 cm high and consists of the base and the upper part, i.e., the oil lamp. The base follows the same shape as the previous style. It consists of a circular base in the shape of a Mughal bowl topped by a bell-like shape fixed in the middle and crowned with a circular disk whose diameter is less than the base topped by a smaller bell-like shape, above which, there is a cylindrical part permeated by some raised circular rings. The body is fixed on the base and inseparable, on which a hole for storing lighting oils is fixed. It has seven holes for putting the wick. In the middle, there is a pointed top. This part is dismantled and installed, so the domed part in the middle of the circular vessel turns into a cavity to fix the candle. It is said that this candlestick was presented by the Mughal Emperor Akbar to the shrine of Sheikh Mu'in al-Din Chishti in Ajmer, Rajasthan [8], fig. (2-a). Another sample is in the Art Museums in Kolkata, dated to the 19th century. It is made of brass and measures 32 cm high, and the base is 13 cm high. It has the same previous shape and consists of two parts: the base and the ribbed body, topped by a dome for oil with seven holes for the wick, fig. (2-b). A similar sample in the National Museum in Delhi, dated to the 19th century, measures 51 cm high. It consists of the base (candlestick) and the lamp consisting of a boy with horizontal ribs and ends with a place for storing oil. It has seven holes to install the wick, fig. (2-c).

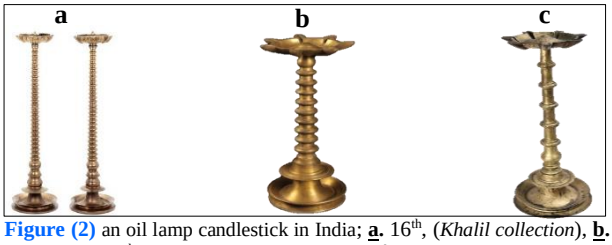

Figure (2) an oil lamp candlestick in India; **a.** 16th, (*Khalil collection*), **b.** 19th (*Art Museums, Kolkata*), c. 19th (*National Museum*), Delhi

2.2.3. The 3rd style

This style is comparable to the aforementioned style in terms of structure. It consists of a lower part connected to

the body, the upper part for the lighting oil, and the wick in the form of a circular container with a bird figure in the middle. It resembles the aforementioned style, as the upper part designated for oil is dismantled and installed. This style is topped by a bird figure attached to the middle of the round container designated for oil, which is disassembled and removed. Below the circular part is another circular disk reverse installed to the previous part with a cavity for the candle. For example, a brass candlestick preserved in the Fowler Museum at UCLA and dated to the 18th century measures 46 cm high until the end of the first part, and the body is 20 cm high. The lower part has a semi-cylindrical base that ends at the bottom in the middle with a circular tray like the Mughal basin. The upper part (oil lamp) has a circular concave container with seven holes for the wick and the bird figure in the middle. This part is completely removed to reveal the place of putting the candle, fig. (3-a). Another sample, dated to the 19th century and preserved in the LACMA Museum, Los Angeles, measures 98 cm high to the place of the candle, followed by the upper part with the bird, and measures 21 cm high. The lower part consists of a base similar to the aforementioned style, followed by the column body with raised circular rings, and then the place of the candle, from which the upper part (oil lamp) is dismantled. The oil lamp is a shallow tray with six positions for the wick. In the middle of the bowl, a bird figure, possibly a roaster, exists with a fleshy part crowning the head called a comb and a long curved down-tail feather, fig. (3-b).

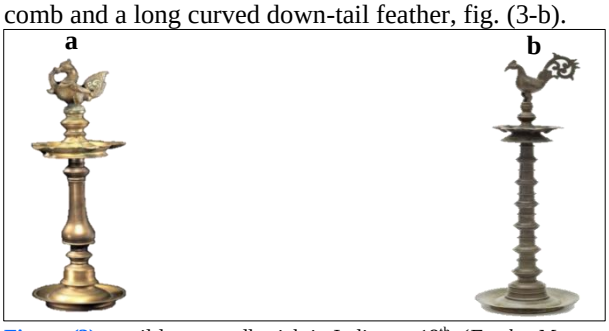

Figure (3) an oil lamp candlestick in India; **a.**, 18th, (*Fowler Museum at UCLA*) **b.** 19th (*LACMA Museum in Los Angeles*)

2.2.4. The 4th style

The oil lamp candlestick consists of two main parts: The base attached to the body and the container for lighting oils and putting the candle [3]. The lower part consists of a bell-like base, ending with a circular tray and topped by a cylindrical column, whereas the upper part is a concave container for storing lighting oils with a place for putting the candle in the middle. In other words, this style uses the upper part for the two functions, i.e., the candle and the oil lamp, without disassembling the upper part. It is used to store the oils for lighting as an oil lamp and as a candlestick via the candle nozzle. The top is a tulip, so it was sometimes called the tulip candlestick. For instance, a brass candlestick in the Deccan region dated to the 17th century and kept in a private collection, "Kouros," measures 41 cm high [3]. It consists of two main parts: The base and the upper part. The base is a cylinder that is 20 cm high, based on a circular base, and topped by a pear shape. Moreover, the upper part is a concave container for storing oils with a deep slot in the middle for putting the candle. Another similar example is in Michael Backman's private collection, which measures 42 cm high. It is from the Deccan, Southern India, with the same previous structure, figs. (4-a & b). Another comparable style in terms of design and function exists, but the container for storing lighting oil has a deep slot like a tulip flower used to store lighting oil and install the candle if needed. It was also known as a tulip candlestick because its top is a tulip [3]. It consists of two main parts: The body, i.e., the column resting on a base, and the top, formed as a tulip. For example, a brass candlestick dated to the 17th century in the Deccan region and kept in a private collection, "Kouros," is 70 cm high. It consists of two main parts: the column and the upper part of the candlestick. The lower part is a cylindrical column that rests on a circular base like Mughal trays on three small legs. In the upper part, the neck is tapered upwards with some bulges and topped by a tulip flower, fig. (4-c).

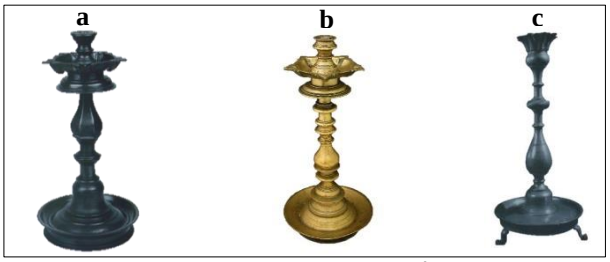

Figure (4) an oil lamp candlestick in India; **a. 17**th (*a private collection Kouros*) [3] **b.** 17th (*Michael Backman's*) **c.** 17th (a private collection Kouros).

3. Result

The study illustrated that this type of lighting means was originally Iranian in the 15th century. It argued that India knew the other styles in the 16th century, as shown by the remaining styles and manuscript illustrations. The candlestick was associated with Indian architecture, with the overall design allowing the function in the form of a base to fix the artifact on the ground and raised parts for lighting. The dimensions and design of the components suited the lighting function in the facilities or parks. The Indian local environment influenced this type of candlesticks. Different manufacturing methods were adopted for making oil lamp candlesticks, such as hammering, welding, and perforation, especially for brass. Oil lamp candlestick was presented as gifts by rulers and emirs to religious establishments. The styles of oil lamps candlesticks did not have the common decorations in the Indian Mughal era, but the makers used a design based on the harmony between the parts and components of the candlesticks that exemplified artistic unity in the Indian Mughal. Applied artifacts in the Mughal era affected the design of oil lamp candlesticks, such as trays and jugs. Additionally, the overall design of these candlesticks was influenced by contemporary Indian minarets with long necks and raised rings outwards.

4. Discussion

4.1. *Origin*

It is worth noting that Mughal India had known candlesticks and oil lamps from the earliest days. Some oil lamp candlesticks have survived, such as a large oil lamp made for the shrine of Imam Reza in Mashhad but not in Iran. The manufacturer inserted a signature in four small cartouches rotating with larger ones, praising Imam Reza and

reading, "*The slave Iskandar Ibn Shukrallah made it in India by the grace of Allah*." and signed the candlestick in separate cartouches "*It was made by the poor man Daoud*". It was made in Lahore and dated Jumada Al-Thani 946 AH/October 14, 1539 AD. It is a unique Indian metal artifact, as it was signed by the manufacturer and dated with the place of manufacture [3]. This confirms that India used different oil lamps during the Mughal era. Emperor Akbar (1556-1605) presented an oil lamp to the shrine of Sheikh Mu'in Al-Din Chishti, the most well-known and glorified Sheikh across the Indian Subcontinent, in Ajmer in 984 AH/1576 AD after returning victorious from the invasion of Bengal to express thanks to Allah. Additionally, Emperor Shah Jahan (1628-1658) presented to Median an amber covered with a net of gold decorated from the cut flower design on all sides and studded with precious stones, such as diamonds [3], which confirms that the Mughals of India used candlesticks and oil lamps in the 16th century, as shown in various manuscript paintings that showed different styles of candlesticks [9], e.g., the one-candle or multiple candles candlesticks and oil lamps. A question may be raised, i.e., "What is the origin of this type of candlesticks used as lamps for lighting?". Some dated the candlesticks of the first style, in which the lower part, i.e., the base, is disassembled from the upper part, i.e., the body, to Iran, from which it moved to India during the Mughal era. Others reported that this type emerged in India, with the oldest styles dating back to the 16th century India [10]. Some researchers argued that this type of candlestick was known as a single candlestick in the Safavid ear and moved to Indian Mughal arts as a Safavid influence [3]. This type was known in 16th century India, but the oldest examples are not dated back to that era, as the oldest one is a candlestick made in Turkey or Iran preserved in the David Museum, dated to 1470 AD, measuring 122 cm high. This large oil lamp candlestick consists of two parts. The lower part is a traditional candlestick, whereas the upper part is a column with a container for storing lighting oil. It has inscriptions in Thuluth showing that it was presented for the ruler of the Aq Quyunlu of the Turkmen(c), Uzun Hasan(d), who ruled Eastern Anatolia, Iraq, and large parts of Iran in 1470 to be placed in the shrine of the Sufi Sheikh Hassi Bayram in Ankara, fig. (5-a, b & c). Thus, we may conclude that this type of candlestick was known in the 15th century Turkey or Iran in the era of Aq Quyunlu, but preferably Iran because Uzun Hassan made Tabriz the capital. Then, it emerged in India and spread in the 17th century, with many styles in India until the 19th century. *The other style*; the tall candlestick with raised rings, might appear in 16th century India, as shown by manuscript illustrations. For example, a Babar Namah manuscript painting dated 1589 shows Emperor Babur receiving a servant, preserved in the (Arthur M. Sackler) collection at the Smithsonian Institute in Washington, and a long candlestick with a circular disc at the top in front of Babur, fig. (5-d & e). Consequently, it could be concluded that this type of candlestick emerged in India to show the development of lighting means in India and integrate the two functions of the candlestick and the oil lamp. This type of candlestick was developed to disassemble the upper concave part instead of the whole body. Later, it evolved greatly, and this part was used without disassembly because of having a place in the middle to put the candle.

Figure (5) **a.**, **b.**, **c.** an oil lamp candlestick, Aq Quyunlu, 15th, (*David Museum*), **d.** oil lamp candlesticks with prominent rings in Mughal Painting [11]; Emperor Babur receiving a servant, Babar Namah, 1589, A private (*Arthur M. Sackler*), **e.** oil lamp candlestick in previous painting.

4.2. *Function and reasons for prevalence*

4.2.1. Function

Candlesticks or oil lamps are tools for lighting. This type integrates the function of candlesticks and oil lamps. In the first style, the upper part, i.e., the body, topped by the container for storing lighting oil, is disassembled completely from the base and turns into a candlestick that ends with the candle nozzle. In the second style, the base is welded to the body, and only the container for storing lighting oil can be disassembled and installed in reverse mode, so the domed top in the middle turns into a deep slot as the candle nozzle. The third style resembles the previous one as the base is welded to the body, but the container for storing the lighting oil is disassembled. Below the container and at the top of the body, there is a candle nozzle. In the fourth style, the container for storing the lighting oil contains a deep nozzle used to put the candle in the middle.

4.2.2. Reasons for prevalence

Some reasons helped the emergence and spread of oil lamp candlesticks in Mughal India, as follows: This item emerged as influenced by the development of the metal industry in India, especially with the interest of Mughal Indian emperors in building art workshops across India [12]. Moreover, they supervised these workshops directly, monitored the artistic movement in different art centers, and evaluated the artwork during production [13]. *Development of the means of lighting:* These candlesticks demonstrate the development of arts in Mughal India, especially the means of lighting. India had not known such means of lighting before that period. Babur reported that niches, candles, and lanterns were unknown in India, as the inhabitants used a three-legged plank instead. One of those legs was connected to a piece of iron, and the second had a weak wick with a percussion with a small slot through which oil drips onto the wick [14]. The Mughal era witnessed the use of lamps and candles at parties and

social events. The French traveler "Tavernier," who lived long in the Mughal court, saw candlesticks and described some luxurious lighting methods [15]. In addition, manuscript illustrations demonstrated the use of various lighting tools, such as various styles of candlesticks, and the surviving styles dated back to the 16th century, confirming that the lighting industry flourished in the Mughal era. Consequently, oil lamp candlesticks appeared. *Prosper Islamic architecture* in India affected the spread of this type of candlestick. Arts and architecture experienced unprecedented advances in the Indian Mughal era [16]. Candlesticks were related to the development of architecture in many architectural facilities as emperors and emirs used to endow several lighting means and candlesticks, especially for mosques and shrines [3]. Furthermore, the development of mosque architecture played an important role in the development of candlesticks that were mainly used in mosques or places of worship for lightning at night. Thus, these candlesticks were put high in some styles, and they were mostly used in mosques. Candlesticks were used in parties in palaces and appeared in court scenes where the emperor used to appear amid the entourage. Palaces were decorated internally with different types of candlesticks that were lit at night [17]. Additionally, candlesticks were used in parks attached to palaces as Mughal emperors were fond of parks and attached them to palaces or established parks alone in India [18]. Notably, parties held in open areas were favored by the Mughals, primarily because of the hot weather of India and the loud and crowded parties of wine, music, singing, dancing, and playing in parks [19]. Halls annexed to public palaces were used to have parties and were sometimes attached externally to the palaces to enjoy the open air [20]. Therefore, parties were held in parks and halls annexed to palaces, where candlesticks were used, as depicted in manuscript illustrations of the Indian Mughal open-air scenes [9]. Such illustrations demonstrated using candlesticks in parks in the 17th and 18th centuries. This style exemplified the development of local industries in Mughal India as most Indian regions achieved self-sufficiency in these industries [21]. The manufacture and production of this item was a delicate local industry in India in royal workshops established by Mughal Indian emperors or in different regions, such as the Deccan region.

4.3. *Dimensions and functional compatibility*

The function broadly means that the manufactured items fulfill their purpose based on the shape. The more efficiently the purpose is achieved, the more useful the item is [22]. The functional purpose is the starting point of the design directed at the function as it is adjusted and developed to achieve the optimum design in which the form better fits the function according to the available materials [23]. Islamic arts were closely related to function as they were primarily related to architecture as part of the human needs that integrate three interrelated and interactive underlying determinants, i.e., expediency, symbolism, and aesthetics, fulfilling existential, life, and social functions. Therefore, a person should fulfill each determinant separately with balancing functions and aesthetics [24]. The function of oil lamp candlesticks in the Mughal Indian era can be studied as follows. *Firstly*, the overall design of the oil lamp candlestick and its relation to function: The form should fulfill the purpose, as the different function necessitates using different materials and having different shapes. As this artifact was mainly used for lighting, the overall design fulfilled the lighting function. It was made of a base for the entire artifact with all parts, whether used to put the lamp or to sort lighting oil, and the body carrying these parts. The overall design was proportional to the parts and achieved the intended function. The manufacturer provided the candlesticks with a decorative style through the harmony of the parts and adding decorative elements, such as bird shapes, at the top. Consequently, the overall design of the artifact allowed for fulfilling the function and included a base for stability, high parts for lighting, a candle nozzle, and an area for storing oil with seven or nine holes for the wick, fig. (6). *Secondly*, dimensions and functional compatibility: Because the main function of this artifact is lighting, the dimensions and design of the parts fulfilled the function. That is, the lighting means fixed to the ground should not be higher than a certain limit in order not to hinder the movement of vision of the people in the area. Therefore, the main dimensions of the artifact helped fulfill functionality and measured 44 cm-32 cm high. However, some examples were 118 cm high to be used beside the walls, not to hinder movement, and to be utilized to get the greatest lighting possible, fig. (7-a). The parts of the oil lamp candlestick: The base (lower part): It is cylindrical or bell-like. In the first style, the base ends with the candle nozzle to fix the artifact to the ground and fulfill the lighting function independently after removing the upper part. Thus, it measures 14 cm high, rating 1:3 of the overall height of the artifact to be used for lighting by putting the candle at the top of the base to compensate for the removed part. It is based on a circular base in the form of a tray in which the bell-like shape is fixed and topped by the place for disassembling the candlestick and putting the upper part dedicated to the candle nozzle. Thus, this style fulfills the functions of installing the artifact to the ground and lighting. In the other style, the unremovable base, measuring 15 cm high, aims to install the artifact to the ground because the candle nozzle is at the top of the body. It is based on a circular tray to fix the artifact to the ground, fig. (7-b). The body is a cylindrical column above the base and represents the largest part of the artifact. Indian candlesticks have a set of repeated cylindrical disks or raised rings known as a*kumbha* [3]. The body is raised by an average of 30 cm. In the long body styles, it is 90 cm high. Although the height of the base is fixed in the long and short styles, the body determines the overall height of the artifact. In the first style, the body is used to carry the place for storing lighting oil and is fixed to the candle nozzle. In the other style, it acts as a carrier for the candle nozzle and the lighting oil area and is welded to the base, but the upper part at the top of the body is removed to turn the artifact from an oil lamp into a candle. The appropriate design and height fulfill the function, and the candlestick is easy to disassemble and install, or the upper part is disassembled, fig. (7-b).

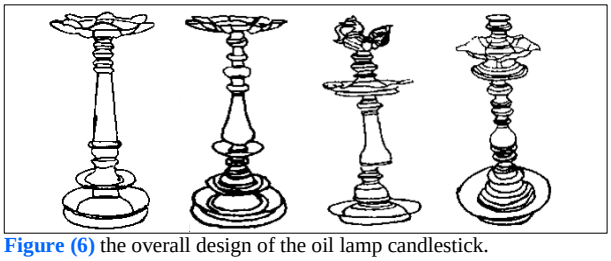

Figure (6) the overall design of the oil lamp candlestick.

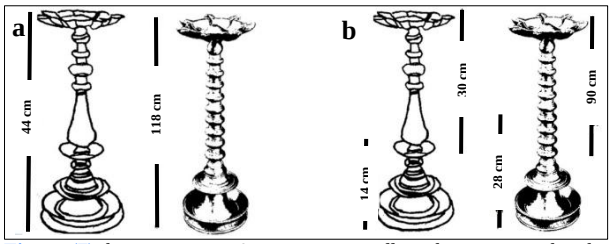

Figure (7) the dimensions of the oil lamp candlestick; **a.** average height, **b.** average height of base and body.

The candle nozzle is deep enough to insert the candle. In the first style, the candle nozzle is at the top of the base directly and is used to disassemble and install the upper part. In the second style, the nozzle is at the top of the body, taking the form of a deep hole resulting from disassembling the tray for storing oil and fixed in a reverse style. In the third mode, the oil tray is completely removed to reveal the candle nozzle. In the fourth style, the nozzle is fixed in the middle of the container for storing oil, fig. (8). *The place of the lighting oil and the wick* differs from one style to another. In the first style, it is a fixed concave tray at the top of the neck with 7-9 slots for the wick. In the second style, it is a concave tray for storing the lighting oil with holes to put the wick and a domed part in the middle that is disassembled and installed in reverse mode to turn into a slot for the candle. In the third style, it is a tray with slots to keep the wick and a bird shape in the middle. It is completely removed to reveal the candle nozzle at the bottom. In the fourth style, it takes the form of a tray with slots for the wick and a middle slot for the candle, fig. (8). *The lighting of the oil lamp*: The stoker responsible for lighting the lamp was a key national job. The stoker must be trustworthy, strong, and able to work. Another complementary job sometimes appeared, namely, the oil keeper, whose task was to preserve the oil and distribute it on the lamps [25]. Oil type: Olive oil was mostly used along with oil types. It was put in the upper part with some water [26]. The stoker used some tools to perform the task, such as *alharaq* to ignite the wick in the form of a long stick with cloth pieces at the top, the *mamshat* pieces of combed cloth filled saturated with oil to keep the wick burning in the lighting [27], and the extinguishers to extinguish the wick[(e)] [28]. Lighting the lower part required disassembling the upper part, keeping the lower part (candlestick), and putting the candle, tab. (1).

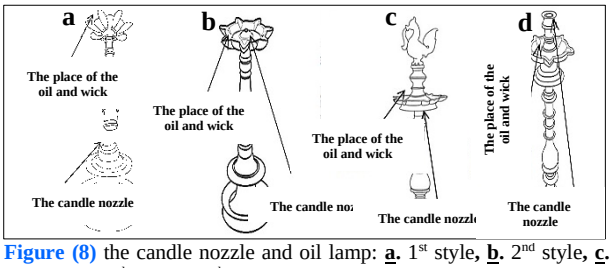

Figure (8) the candle nozzle and oil lamp: **a.** 1st style, **b.** 2nd style, **c.** 3rd style, **d.** 4th style.

Table (1) illustrates the dimensions and function of the oil lamp candlestick

Style	Date (Cen.)	Design	Heigh (cm)	Base H (cm)	Body (cm)	Candle nozzle	Oil lamp
1st	17-19	The upper part is totally disassembled from the base that turns into a candlestick ending with a candle nozzle.	44	14	30	A deep slot directly above the top	At the top of the body A fixed tray for storing lighting oil
2nd	16-19	The container for sorting lighting oil is installed in reverse mode, turning the domed top in the middle into a candle nozzle	50 - 118	18	35 - 99	At the top of the body; a slot that appears when disassembling and installing the oil lamp in a reverse mode	At the top of the body; a tray with a doomed part in the middle that turns into a deep opening when fixed in a reverse mode
3rd	18-19	The upper body part dedicated to storing lighting oil is disassembled. The candle nozzle is below the body.	46 - 118	20	26 - 98	Above the body; a deep hole below the oil tray	It is above the body and contains the body shape in the middle. It is removed to put the candle.
4th	17-18	The container for storing lighting oil in the middle has a deep hole for the candle. It is also formed to install the candle or store the oil.	41	20	21	Above the body; a hole in the middle of a tray for lighting oil	It is fixed above the body and contains a deep hole in the middle.

4.4. *The influence of the Indian environment*

Islamic and local Indian artistic styles were mixed in the Indian Mughal era, which motivated the influence of Islamic art in all Indian arts that developed unprecedentedly. All of this happened because of the understanding of Indian art in Islamic art. Arts and architecture evolved greatly in the Indian Mughal era [29]. The Indian Mughal era achieved economic prosperity, artistic development, and artistic renaissance. Moreover, Indian art experienced the direct influence of the local environment. Several reasons caused the local influences on the Indian Mughal arts, especially on oil lamp candlesticks. **I)** The unity of India under the Mughal state: Mughal emperors united and controlled India, spreading Islam, sciences, arts, and literature and empowering the economy [30]. India promoted nationalism that included all the inhabitants of India, including Muslims and Hindus [31]. Moreover, arts and architectural styles varied in Mughal India based on various ruled peoples. **II)** Religious tolerance of the Mughal rulers: The religious tolerance with the population adopted by the Mughal state since Dahir Al-Din Muhammad Babur greatly affected the emergence of local Indian influences on the arts in the era of the Mughal emperors [32] while maintaining the unique Indian personality in architecture and arts [33]. Such religious tolerance caused the integration of the population and the emergence of a third civilization with the elements of these two civilizations [34], namely the Indian-Islamic civilization, characterized by considerable cultural diversity. Notably, when two violent trends meet, it is difficult for one to overcome the other [35]. **III)** Hindu artists: India had a lot of artists and craftsmen in every field. Mughal emperors benefited greatly from these craftsmen. For example, Emperor Babur reported that there were many workers in every profession and craft who inherited crafts and professions from their parents and passed them to children [36]. The Mughal emperors employed Hindu artists in the imperial workshop during the reign of Humayun [37]. It was mentioned that the Akbar complex of arts had nearly seventy artists, mostly Indians from across India, to show their talents alongside other Muslim artists despite their different religious beliefs [38]. **IV)** Translation of Hindu Books: Akbar was interested in translation and translated many Hindu books from Sanskrit into Persian, supervised by Hindu and Iranian writers in order to know more about Hindus, such as " Mahabharata", which was translated into Persian and called "*Razmnama*", i.e., World Wars [39]. The translation movement appeared during the reign of Jahangir, especially in the writings of poets who wrote some poems about Krishna that were translated into Persian. Several poets in Jahangir's court wrote poems about Krishna in the 10th H./16th G. century [40]. All these reasons motivated such influences on arts in the

Mughal era, especially on oil lamp candlesticks, as demonstrated by their function and were mainly used in mosques or places of worship, inspired by the Indian local environment. Using candlesticks in the Indian worship places was important and appeared in Islamic buildings as an influence of the Indian architecture, including bird shapes at the ends of candlesticks because the Indian environment contained many birds with multiple colors, such as peacocks and falcons. Furthermore, India had unique types of birds numbered 1.200 [41]. Mughal rulers were largely interested in birds and instructed artists to depict them [42]. For example, *the hamsa*, a well-known cute bird with a long tail in the local Indian environment, was depicted in different forms during the Mughal era [43], and the rooster spread in India [44] and drew the attention of Jahangir who wrote two pages about roosters in his diaries [45]. In sum, bird shapes, such as roosters, appeared at the top of the oil lamps as an influence of the Indian local environment.

4.5. *Manufacturing materials and methods*

Mughal India was famous for the diversity of metal artifacts thanks to the availability of important minerals. Mughal rulers in India were famous for creating artifacts from many metals, such as brass and bronze [3], because of the large number of brass and bronze mines in India. Artworks produced by royal workshops were dedicated to the palaces of rulers, nobles, and senior statesmen [10]. During the reign of the Mughal emperors, Indian craftsmen were skillful. An artifact could pass from one maker to another until it was completed because every maker mastered a certain craft or decorative style, such as engraving and inlaying with precious stones or enamel [47]. As a result, the art of making and decorating Mughal Indian metals flourished by contemporary artists and craftsmen and continued for domestic and religious purposes in temples. The court artistic workshops had the best makers and craftsmen of metal works, and each craft had a workshop for metal artifacts, such as making gold and silver artifacts, brass and bronze metal utensils, ornaments inlaid with precious stones, and encrusted metal artifacts [1]. Metal makers were successful because of their artistic creativity and knowledge of the ratio and proportionality between the dimensions of the surface, the shape, and the size of the decorated artifacts. Most artifacts, such as hookah bases, cups, notebooks, incense burners, and jugs, were brass or bronze [48]. Moreover, these oil lamps and candlesticks were made of metals, adopting the same industrial method. Metal, whether brass or bronze, was heavily used in manufacturing oil lamp candlesticks. Most of such artifacts were made of brass because it was widespread in India since the 16th century. Ain Akbari reported many mines, such as Byaneh, Singhana, and Burat [49]. Brass may be affected by oxidation, especially in damp areas or those exposed to air, causing a green toxic substance [50]. These candlesticks might be exposed to that danger and sometimes could be used in the air and open areas, so they were covered with a coating of tin in order not to be rusted. Manufacturing methods: Hammering used in shaping candlesticks was one of the most important methods for forming metal before and after Islam. Metals were heated and fermented to be easily formulated. Hammering was used on metal artifacts until reaching the final form by putting metal plates on an anvil made of iron, ending with a steel tip to withstand hammering; then, the metal was hammered with a small hammer [51]. It was applied to brass, gold, or silver artifacts because these metals could be hammered and shaped easily [52]. This method was used for making most parts of the candlesticks. Each part, such as the base or neck, was made and welded. Casting was also adopted and was one of the most important methods of manufacturing metals in the Islamic era [53]. Metals were melted in pots and then poured into molds whose gaps matched the shape of the metalwork to be made. Those molds were engraved with deep or raised decorations, and the metal was left in the molds to cool, taking the surface of the mold with its decorations [54]. Casting was adopted for oil lamp candlesticks to form the upper part, especially the birds or the multi-hole top used to store oil and wick areas. Furthermore, engraving helped form metals of suitable thickness, especially brass, to withstand hammering with a sharp-tipped pen [55]. The width of the metal engraving pen should fit the type of decorations required, the surface area, and the thickness of the metal sheets [56]. Engraving was used to carry out inscriptions on some styles like sample No.2. Perforation and cut-out decoration were used to make some parts of the candlesticks. After drawing the required shapes, the manufacturer carried out the metal using a saw-like machine [55]. Perforation was adopted to make delicate decorations in the bird's body at the top of the oil lamp in some styles.

4.6. *Decorations*

4.6.1. Decorative style

Oil lamps candlestick styles did not contain the common decorations of the Indian Mughal era, but the makers created a decoration based on the coherence of the parts and components of the candlesticks themselves. The base took the shapes of Mughal trays encompassing the bell-like base or the bell carrying the candlestick, so it looked like the base of a jug in the tray as a decoration. Moreover, the body of the artifact had coherent components and raised rings. The top took the shapes of the concave vessel with wick holes in the sides, taking star shapes. In other words, the manufacturer created a kind of aesthetic decoration through coherent components and artistic designs.

4.6.2. Inscriptions "names and titles"

The title of Imad al-Mulk appeared on sample No. 2 in the form of Sarkar Nawab Imad Al-Mulk, i.e., "Sarkar, the deputy of Imad Al-Mulk." The title of Imad Al-Mulk appeared in India before the Mughal state to denote the owner of the *Dīwan Al-ʿArīḍ*. It was given to Abu Bakr, the hajib (i.e., the person who prevents people from entering without permission) of Sultan Al-Tamash (1210-1235 AD) [57]. Moreover, it was known during the era of the Khilji Dynasty, specifically in the reign of Shah Al-Khilji (1316-1320 AD), and continued in the Tughlaq Dynasty in the reign of Sultan Muhammad Tughlaq Shah (1324-1351 AD) [58]. It survived in the Indian Mughal era. Imad al-Mulk mentioned here was "Ghazi Al-Din Imad Al-Mulk," the minister of Aziz Al-Din Alamgir II (6 June 1699 - 29 November 1759)[(f)] from 1756 [31] and fought many wars and revolutions during the reign of Alamgir II against the Marathas [59]. The relations between Alamgir II and the strong minister Imad Al-Mulk deteriorated, causing the assassination of Alamgir II by Imad

Al-Mulk and the Maratha leader [60]. Sarkar appeared as a deputy of Imad Al-Mulk in the Deccan region [61]. The deputy (pl. deputies) title was used for the representative of the sultan and was given to the rulers of the Mughal provinces and the minister deputy, so some Hindus converted to Islam to get this position, such as Sarkar, the deputy for Imad Al-Mulk in Hyderabad. The name Sarkar appeared on many applied artifacts, such as a metal cannon in 1835 preserved in the Khalili Collection of Islamic Art [62]. He was the deputy of Imad Al-Mulk and had an important leadership role, demonstrating the date of the candlestick in the first half of the 19th century. Having the name Sarkar and the title Imad Al-Mulk illustrated the continuous donation of candlesticks and oil lamps to mosques and shrines by emirs in the Indian Mughal era, known since the era of Humayun and Akbar. The current style was presented to a religious facility in Hyderabad, Northern India.

4.7. *Impact of the artistic unity in the Indian Mughal era*

The Indian Mughal arts had one artistic unit, denoted by the similarity of some engraved decorations on various applied arts, including carpets, textiles, metals, glass, wood, and ivory, as well as buildings and illustrations of the Indian Mughal school, despite using different materials and space, demonstrating a general artistic attitude and a decorative personality of the artworks at the time. Many factors motivated the artistic unity in the Mughal-Indian era, such as the art workshops in the imperial court, where various types of applied arts were created with one artistic field and imperial supervision. Moreover, senior masters of painting supervised art workshops and established a general work system; therefore, artists, painters, and makers of military outfit and armor were supervised by the royal court [63], and in the art workshops in the regions, the makers moved to**.** The supervisor of the art workshops made a general design with specific dimensions and standards to be implemented by the makers in their respective fields. Those candlesticks illustrated the art unity in the Mughal era, as follows

4.7.1. The decorations of the Indian Mughal era

Many decorative elements executed in the Indian Mughal painting resembled the decorative elements of candlesticks, such as bird shapes, including the *hamsa* and rooster at the top of the candlestick like the illustrations of the 16th century, fig. (9).

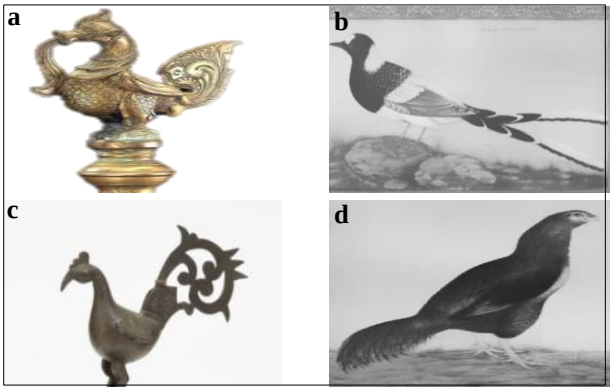

Figure (9) the birds of Mughal India and oil lamp candlesticks: **a.** *hamsa* bird on top of oil lamp candlestick, **b.** *hamsa* bird in the painting of Mughal India [46], **c.** *rooster* bird on top of oil lamp candlestick, **d.** *rooster* bird in the painting of Mughal India [46].

4.7.2. The influence of applied artifacts

Metal artifacts in Mughal India clearly influenced oil lamp candlesticks. For instance, the base resembled the shapes of circular trays for storing contemporary flasks. [64]. The base and the bell inside had the same style as trays, fig. (10-a & b). Additionally, the upper part ending with bird shapes adopted the style of applied artifacts in the Mughal era. Birds were one of the most important elements of Indian art, especially metalworks [65]. Several applied artifacts took the form of birds, including incense burners and lamps, such as a brass lamp in the Los Angeles Museum, fig. (10-c & d).

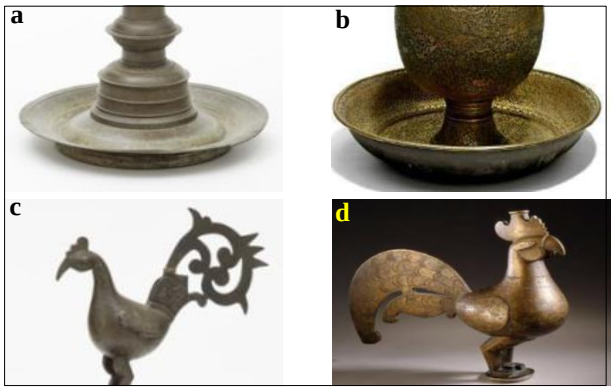

Figure (10) forms of Mughal arts and oil lamp candlesticks: **a.** the base [65], **b.**tray and flasks, Mughal Arts, **c.** *rooster* bird on top of an oil lamp candlestick, **d.** lamp "*Masraja*", India, 17th (*Los Angeles Museum of Art*).

4.7.3. The influence of architectural structures

Artists in India were generally influenced by architectural structures in the formation of antiques [66]. For instance, the overall design of these candlesticks was affected by contemporary Indian minarets, including the long neck with raised ribs [67] in the Indian environment from the early Indian Mughal state, namely the *kumbha* minarets, e.g., Qutab Minar (1193-1315 AD). Additionally, the great mosque in Delhi (1650- 1656 AD) directly influenced the design of a candlestick structure with raised rings externally, fig. (11).

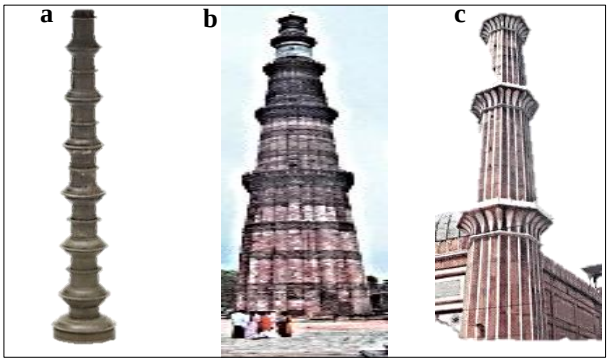

Figure (11) Indian architecture and oil lamp candlestick: **a.** a candlestick with raised rings externally, **b.** mosque of Qutub Minar (1193-1315 AD), **c.** the great mosque, Delhi (1650-1656 AD)

4.8. *Comparison between the candlestick styles and manuscript illustrations*

Painting, depending on the joint efforts of the painter, illustrator, writer, and notary, was a great achievement in India. Humayun introduced many Persian traditions based on painting in the Mughal era. Additionally, Akbar advanced painting, but his successors caused deterioration

[68]. Examples of this type of lighting appeared in the paintings of Indian Mughal manuscripts, including a representation of the assassination of a dervish dated to the 10th H/16th G century that showed the candlestick with the same known raised bell-like base topped by the long neck and then the top for the oil, fig. (12-a & b). Another painting from Mewar shows the use of lighting lamps in parks, fig. (12-c), and a third one depicts a disciple receiving the advice of his sheik with a lit candlestick above taking the dominant Indian Mughal style with a high structure lit from above. These illustrated styles resembled the known oil lamp candlesticks.

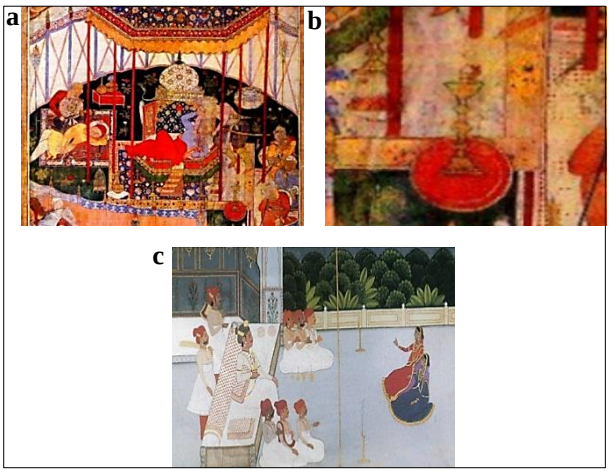

Figure (12) an oil lamp candlestick in Indian painting: **a.** the assassination of a dervish, Mughal India, 16th [68], **b.** in the previous painting, **c.** in painting, Mewar, India, 17th [69].

5. Conclusion

India had different lighting methods in the era of Mughal emperors (1526/1857 AD). Thus, oil lamp candlesticks evolved, as shown in the remaining styles and manuscript illustrations. The study showed that India knew a rare type of lighting means that integrated the candlestick and the oil lamp with a candle nozzle and a place for storing lighting oil and wick, namely oil lamp candlesticks. The study highlighted four art styles of oil lamp candlesticks. In the first style, the upper part, i.e., the body and the place for storing lighting oil, were completely disassembled from the base, turning into a candlestick that ended with the candle nozzle. In the second style, only the upper part of the body, i.e., the container for storing the lighting oil, was disassembled and installed in reverse mode, turning the domed top in the middle of the container into a deep hole as a candle nozzle. In the third style, only the upper part of the body, i.e., the container for storing the lighting oil, was disassembled to reveal the candle nozzle at the bottom of the container and at the top of the body. In the fourth style, the container for storing lighting oil in the middle had a deep hole for the candle or both functions. The study illustrated that this type of lighting means was originally Iranian in the 15th century because there is an example of the first style with the name of Hasan Uzun, the ruler of Ak Quyunlu. It argued that India knew the other styles in the 16th century, as shown by the remaining styles and manuscript illustrations. The candlestick was associated with Indian architecture, with the overall design allowing the function in the form of a base to fix the artifact on the ground and raised parts for lighting. The dimensions and design of the components suited the lighting function in the facilities or parks. The Indian local environment influenced this type of candlesticks, including their use in religious facilities or in the shapes of birds on top. Furthermore, different manufacturing methods were adopted for making oil lamp candlesticks, such as hammering, welding, and perforation, especially for brass. The study proved that this type of candlestick was presented as gifts by rulers and emirs to religious establishments. The styles of oil lamps candlesticks did not have the common decorations in the Indian Mughal era, but the makers used a design based on the harmony between the parts and components of the candlesticks that exemplified artistic unity in the Indian Mughal era and included birds like the bird decorations at the time. Applied artifacts in the Mughal era affected the design of oil lamp candlesticks, such as trays and jugs. Additionally, the overall design of these candlesticks was influenced by contemporary Indian minarets with long necks and raised rings outwards, as depicted in manuscript illustrations.

Endnotes

(a) The first form of candlestick was a torch whose upper end was dipped in grease or wax. Then, it developed and was attached to a metal and wooden disk below the candle.

(b) William R. and Clarice V. Spurlock Museum of World Cultures is a regional center for cultural and archaeological historical collections worldwide. Through our collections and educational programs, we help explain the reasons for cultural diversity at the University of Illinois Urbana-Champaign, Georgia.

(c) *Aq Qīūnālū* was the owner of the white sheep. This tribe belongs to Turkish dynasty called the Bayander. Bahaa al-Din Othman, i.e., Karauluk Othman, was the real founder of the Qyunlu dynasty (780-838 AH/ 1378-1438 AD).

(d) He was Awzan Hasan bin Ali Bey bin Karauluk Othman 857-882 AH/1453-1487 AD. He moved the capital to Tabriz instead of Diyarbakir (Amad). *Aq Qīūnālū* flourished in his reign and included Kerman, Persia, Isfahan, Armenia, and Diyarbakir.

(e) Tip of the wick: The upper part of the wick from the top of the cork floating on the oil in the slug or the shell put in the lamp for lighting.

(f) Aziz al-Din was the second son of Sultan Jahan Dar Shah. Imad al-Mulk promoted him to the throne after defeating Ahmad Shah Hader in 1754. When he became a ruler at the age of 55, he was entitled "Alamgir" and adopted the approach of Aurangzeb Alamgir. He had no experience in administration and war, as he spent most of his life in prison. Therefore, he was a weak ruler, and his minister had all powers.

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