

“Ornamental *Jālīs* of the Mughals and Their Precursors”

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Abstract

Even before the Mughal period, Hindu artisans were renowned for making stone *jālīs* with simplified geometrical designs, a tradition that continued in the modern times in the state of Gujarat. With the advent of the Mughals the technical expertise of the Hindu *jālī*, makers were put to work carving new Timurid and Safavid designs. The height of the Mughal *jālī* art came under Shah Jahan when a new vocabulary of Mughal decorative designs, as used for other stone carvings; painting, etc., was applied to perforated marble screens. It is not hitherto been realized that unlike the earlier Hindu *jālīs* the Mughal *jālīs* follow the decorative vocabulary of the court.

Keywords: Mughal, Perforated screens, *jālīs*, lattice work, ornamentation, curvilinear, designs.

1. Introduction

One of the ancient arts of the Indian Subcontinent is the carving of stone railings and screens. Hindu carvers were highly skilled in their craft in the pre-Islamic period in this region. Their perforated stone screens inspired foreign invaders who happily utilized them for the embellishment of their architecture. Pierced trellises with various designs existed throughout the Sultanate Period and are found in other Islamic Provincial styles as well as at Rajasthani courts. Fine latticework enjoyed a considerable status among the Mughals. Mughal *jālī* screens not only demonstrate the unsurpassed skills of the stone carvers (*sang-tarāsh*) who treated the stone as if it were wax, but they incorporated new designs that reflect the aesthetic taste of the emperors. To my knowledge, the art of Mughal *jālī* decoration has never been studied in a chronological order and with reference to the general development of ornament.

The word *jālī* meaning “an iron net” in Urdu and Sanskrit is employed for pierced screens. The screen itself with its net-like effect is called *jālīdār*. Its cousin, wooden latticework, is called *pinjrā* in some regions of Punjab, Pakistan whereas in Persian the word *pinjreh* is used for window (Gardezi, 1993).ⁱ This art is usually called *jālī* art or *jālī kā kām* (pierced screen work) in Pakistan nowadays. In describing the Jami Masjid in Ahmedabad of 1423 Emperor Jahangir in his *Tuzuk-i-Jahangiri*, uses the word *panjarā-ī-sang*” (stone window) for pierced stone screens (Jairazbhoy, 2000, p. 100). Nath (2005, pp. 17-21) referring to architectural terms used by Abdul Hameed Lahori (Shah Jahan’s court historian) notes that the word *mahjar* (*muhajjar*) means, “a *jalied* stone curtain or enclosure around the graves; and a *jhajjharī* is a screen of a man’s height,” whereas *shigrāfgārī* also stands for *jālī* work.

Nath (1988, pp. 102-103, 1982, p. 286) discusses a *Śilpā*, a Hindu text on fine arts and architectural construction of 650 A.D. in which various terms are given for *jālīs*: *jālā*, *jālavantaā*, *jālagavaksakā*, and *jālakā*. This text refers to the placement of *jālīs* in architecture but does not discuss their designs and in another text, the *Samarāngana-Sūtradhara* of King Bhoja of 1018-1054 A.D., *jālī* is informally mentioned.ⁱⁱ In an earlier publication, Nath (1982, pp. 110-111) mentions that the treatise of early eleventh century on woodwork includes *jālīs*. Wooden lattice screens were favored due to which towards the early medieval period this art was initiated in stone most likely in Gujarat.ⁱⁱⁱ The *Kāśyapā-Śilpā* of 1300 and *Śilpā-Ratnam* of sixteenth century both had a separate chapter on lattices.

The *Śilpā* of 1300, mentioned in Nath's supplement (1988) to Volume I and II, explains the six types of *jālīs* according to their shape and design for temple architecture: the first two are titles for the forms of *jālīs*, the word *gonetrā* for semi-circular and triangular pierced screens and *hastinetrā* for square and rectangular shaped ones. The remaining four types are related to patterns for lattices, respectively called *nandyvartaā* swastika-based (incorrectly called interlaced by Nath); *Rjukriyam* or straight line geometrical designs; *Puspakarnā*, floral designs; and *Karnaā*, curvilinear patterns (confusingly referred as "geometrical designs made of curved lines, precisely arabesques") (Nath, 1988). In Nath's (1988, pp. 103-104) view these discretions were only added after the standardization of the text in the early fifteenth century. The seventeenth century *Śilpā* is elaborated with editing and improved description of *jālīs*.^{iv}

Smith (n.d. p. 171) mentions that perforated screens were in vogue at Mysore, the Deccan or Chalukyan style of mid-sixth to tenth centuries. He notes that some of the finest examples come from the Temple at Belur of 1117 in the Deccan. They have traditional motifs interspersed with figurative subjects but while quoting Fergusson who has a better opinion Smith (n.d. p. 118; See Tadgell, 1990) somewhat contradicts himself saying that the windows with perforated slabs are not so rich and varied.^v The overall character of pre-Islamic Hindu *jālīs* is that they were of a smaller size as compared to the Indian Islamic windows, and had simple stylized patterns.

The Muslims utilized perforated screens both for functional and aesthetic purposes at least from the beginning of the fourteenth century in the Indian Subcontinent. Alai Darwaza of 1305 built under Khilji rule at Delhi has white marble *jālīs* with geometrical patterns, fitted into the arched windows of the lower storey of the monument. The *jālīs* show two types of geometric interlacing. One is based on a central star-hexagon shape with interwoven triangles and squares that is also found in its interior in carvings (plate 1). The other is based on interlacing octagons, in which a line on both the axis is crossing in the center of an octagon creating an overlaid square (plate 2) (Critchlow, 1976, pp. 34, 123-124, and 144).

Disagreement on the origin of the geometrical patterns of the Alai Darwaza *jālīs* again comes from misinterpretation of the term geometrical interlace. They neither resemble *nandyvarta* (the swastika-based design as discussed previously) nor were the patterns mentioned in the 1300 *Śilpā* (Nath, 1988, pp. 103-105). Similar interlaced polygon pattern in carving (plate 2) can be seen at the Quwwat-al-Islam Mosque of 1199 (enlarged between 1210 and 1229) and in the interior of Iltutmish's Tomb of 1235 in the same complex at Delhi. Both structures are chronologically earlier than the *Śilpā* of 1300, and they were the precedents for the Alai Darwaza lattice patterns. This would indicate that the intricate and interlaced geometric work (strap work) called *gereh-sāzī* is the contribution of Islamic art to the architecture of India (Milwright, 2010; Wulff, 1966; Blair, 2010; Necipoğlu, 1992).^{vi} Similarly Nath (1976, p. 74) also suggests that the source of geometric ornament and its development is not Indian indigenous but Islamic. Hence, it is likely possible that Alai Darwaza *jālīs* were the outcome of the Indian craftsman's indigenous skill with Islamic *gereh-sāzī* designs (available through patterns brought from neighboring Islamic lands).

The Alai Darwaza building was the first of all Muslim monuments at Delhi and is contemporary with Islamic architectural undertakings at Gujarat. Khilji governors from the imperial capital at Delhi were appointed to Gujarat after 1298 and architectural activities started in the captured province from about 1300, almost contemporary to the building of Alai Darwaza (Sahai, 2004, pp. 50-51; Brown, 1956, p. 47). This early fourteenth century Delhi gateway is usually studied for its Islamic decorative elements, but its pierced window screens are Hindu in their workmanship, and most likely Gujarati. However, we believe the Alai Darwaza patterns are different from Gujarati perforated screens as discussed in the following (Brown, 1956, plates XXXIII, fig 1).

One of the favored compositions of lattices of the Gujarati Sultanate architecture at Ahmadabad are small square panels fitted together to form a large screen. Such screens are found at Ahmadabad at the Jami Masjid of 1423, the Tomb of Makhdoom Shiekh Ahmed Khattu of 1446, the Mosque of Rani Separi of 1514, and the Mosque of Sidi Sayyid of 1572-1573 (plate 3) (See Batley, 1960, plate 20; Brown, plates XXXIV, XXXV and XXXIX; Tadgell, plate 199c; Sahai, 2004, pp. 53-54; Nath, 1985, plates CL, CLI and CLII). These square panels have three basic types of patterns: geometric, combination of geometric and curvilinear, and complete curvilinear such as medallions. Characteristically, floral motifs are simplified and totally stylized; their execution demonstrates exact geometric calculations. Symmetry is kept under consideration for all the three types, and a striking aspect of the screens is that they present an overall composition of the small panels in which rows of similar designs appear. There is no difficulty in tracing the Hindu origins of such medallion or rosette designs of Gujarati pierced latticework (see Smith, n.d., plates 120b and 122).

Similar Gujarati *jālī* patterns were also employed for a screen at the Tomb of Mirza Aziz Koka of 1624 at Delhi. He had been Jahangir's governor of Gujarat who was temporarily buried at Sarkhej near Gujarat and afterwards permanently at Delhi (Asher, 1992, p. 142).

This would indicate that Gujarati *jālī* style of the fourteenth to the sixteenth centuries was still in vogue in the second half of seventeenth century. The most astounding example of Gujarati *jālī* work, commendable both for its extreme refinement and for rhythmic compositions, is the arched curvilinear patterned pierced screen of Sidi Sayyid Mosque of 1572-1573 at Ahmadabad (plate 4). The shape of this arched window, entitled *gonetrā* in the *Kāśyapa-Śilpā*, has two trees, a central one with a heavy trunk whose branches spread out over the whole area with an abundant growth of stems, off shoots, tendrils, leaves and floral motifs, and the second, a palm tree crowned by stylized palm leaves (Nath, 1988, p. 104).^{vii} The pre-Islamic Hindu serpentine creepers with sinuous vines and plant forms inspire the composition (see Smith, n.d., p. 174, plates 120c and 121). As compared to the Gujarati small square panels (plate 3), these arches display plasticity in carving. Its subject the tree of life motif has a very ancient history and appears in almost all the past civilizations where it has always been associated with a mythological and symbolic interpretation. Similarly, the palm tree by the Assyrians was known as the tree of life and stood for infinite life and victory (Rowena & Shepherd, 2000, pp. 236- 244). This motif was also in vogue in the early Islamic period that it was employed for perforated window screen as seen at the Palace of Qasr al Hair al-Gharbi that has a Tree of Life motif set in a true arch shape window (plate 5).^{viii} Some have described the tree of life motif as arabesque, which is not the appropriate term for it.^{ix} The tradition of Gujarati *jālī* making is based on Hindu patterns and it retains its own decorative vocabulary. It is quite different from Mughal complex interwoven *gereh-sāzī* designs. The perforated screens of Sidi Sayyid Mosque anticipate the Mughal *jālīs* in terms of their technique rather than design.

Mughal *jālīs* retain their own character and reflect prevailing ornamental vocabulary of the court. One of the notable examples from the early Mughal period are the perforated trellises at the Tomb of Shiekh Muhammed Ghauth of 1565 at Gwalior. However, some geometrical interlace patterns and screens inspired by Persian designs are to be seen in various courts in the Deccan and Rajasthan. In Nath's view (1982, p. 219), the Tomb of Shiekh Muhammed Ghauth of 1565 at Gwalior is the first Mughal monument that has lattice screens in an abundant number: about 100 panels, which anticipate the Mughal lattices at Fatehpur Sikri. One of its pierced screens is composed with panels of both geometrical and stylized patterns (plate 6). Above the geometrical lattice panels is a horizontal border comprised of reciprocal stylized Chinese cloud collar motif: an inspiration from the Timurid art of the fifteenth century, filled with a stylized floral shape. Similar reciprocal design is found in the fresco painting of the interior of Sultan Wali Bahmani's dome at Bidar of 1421 at Deccan, which was executed by a Persian artisan, Shukrullah of Qazvin (Chaghatai, 1963, plate 1). The Tomb of Atagah Khan of 1566-67 in Nizamuddin, Delhi also has interlacing geometrical patterns inspired by the exuberant masterpieces of the vicinity.

One of the earliest Mughal geometrical *jālīs* comes from the second half of sixteenth century of Akbar Period. A pair of lattice screens in red sandstone has complex *gereh-sāzī* designs, typical of Islamic art.^x Not only geometrical but curvilinear patterned trellises are also found during this period, especially from Fatehpur Sikri. One of the rectangular pierced screens from the Hawa Mahal, a part of the royal palace of Fatehpur Sikri of 1565-1570, has a small rectangular field containing Timurid *islīmī-khatā'ī* designs of split leaf joined back-to-back enclosing a lotus (plate 7). The border is filled with similar *islīmī-khatā'ī* with fluid movement of the vine and a type of split-leaf motif that can be identified as Timurid due to its two-toothed center.^{xi} Tendrils and simplified floral designs are attached to the vine, and the overall area is composed with a single unit symmetrically repeated on its vertical axis. This *jālī* demonstrates that pierced screens at Fatehpur Sikri were not only "ruggedly geometric" (Welch, 1985, p. 191) but have repeated Timurid curvilinear patterns as well. Although, this *jālī* is one of a kind, however; similar designs are painted on the dadoes of Jami Masjid Fatehpur Sikri of 1571 (See Nath, 1985, plates CXXI and CXXII).

Nevertheless, identifying this Akbari lattice window as Gujarati is debatable. Gujarat was conquered by the Mughals in 1571 and the Royal residences of Akbar at Fatehpur Sikri were built between 1572 to 1585 thus examples from Fatehpur Sikri are contemporary to the Sidi Sayyid lattices of 1575 (Nath, 1985, 1988; Stronge, 2002; Sahai 2004; Brown, 1956; Tadgell, 1990).^{xii} The point to ponder is that if the Mughals directly encountered Gujarati art, and some architectural elements from it were exactly incorporated in the Imperial artistic vocabulary, why were the beautiful *jālī* patterns of the Mosque of Sidi Sayyid not imitated? One of the reasons must be the availability of Mughal decorative design mostly Iranian Islamic patterns.

The last quarter of sixteenth century is the amalgamative phase of Mughal ornamentation in India: motifs from various sources are still identifiable. Whereas from the beginning of seventeenth century, Mughal decorative repertoire is progressively synthesizing into a new Mughal style — “Mughal Decorative style” — a transformation completed by the second quarter of seventeenth century (Abbas, 2008, p. 124). However, the age of Akbar is an age of inspiration and inclusion, and this Timurid *islīmī* of the Fatehpur Sikri *jālī* was chosen, instead of the Sidi Sayyid pattern, because it was the production of an Imperial *kitabkhana* dominated by Persian design repertoire.

Another Mughal monument, the Tomb of Salim Chisti from Fatehpur Sikri is notable for its exuberant lattice screens enclosing the verandah that have intricate *gereh-sāzī* designs. There is a variety of patterns from the geometrical star group and interlacing polygons. However, one of the perforated trellises there has *islīmī* design on the spandrels whereas the main field has a geometrical design from the star-shape group (plate 8). The tomb of Salim Chisti, died in 1571, was completed in 1581 but according to Nath (1985, p. 205) the verandah perforated trellises were added later, about 1605-1607. The similarity of the design of the spandrel with an earlier Fatehpur Sikri example (plate 7) shows that until the first decade of the seventeenth century curvilinear *islīmī* pattern retain its character with little or no change. The Tomb of Salim Chisti exhibits Gujarati influence in one architectural aspect: its inclusion of perforated semi-circular lattice screens on the exterior is similar to some Ahmadabad monuments (Sahai, 2004; Tadgell, 1990).^{xiii} However, the availability of a Timurid pattern in Mughal *jālī* art of the first decade of seventeenth century and its absence in later lattices of the Jahangiri period suggests that the *islīmī-khatā'ī jālīs* of Salim Chisti's Tomb and the Hawa Mahal at Fatehpur Sikri were of experimental nature.

An important monument of Jahangir Period that has perforated traceries is the Tomb of Akbar completed in 1617 at Sikandra. Its upper storey, where the tomb is exposed to the sky is enclosed with fretted traceries of varied geometrical patterns in white marble. Each *jālī* is a masterpiece of its own due to the ornate details and refined carving. Surprisingly the tomb has prominent curvilinear ornamentation in inlay on its exterior and fresco painting in its interior but the patterns selected for the *jālī* screens are geometrical. Similarly, the red sandstone lattices of Jahangir's quadrangle at Lahore Fort of 1617-18 are all geometrical in design as compared to the profuse curvilinear relief carvings.

Many such geometrical *jālīs* were utilized in the first quarter of seventeenth century. The stylized curvilinear decorative vocabulary of this phase, which combined Indian indigenous, Islamic and European motifs, called Mughal Decorative Style, was not applied to lattice screen at this date. The appropriate reason for the dominant geometrical *jālīs* and sparse curvilinear pattern of *jālīs* in the first quarter of the seventeenth century is unknown. At the beginning of the second quarter of seventeenth century major Mughal monuments such as the tomb of Jahangir of 1628-1637 at Lahore and the tomb of Itimad-ud-Daula of 1628 at Agra, had white marble *jālīs* with interlacing *gereh-sāzī* designs. Apart from the pierced screens, the decoration of the latter building was dominated by Iranian motifs, while the former, shows Mughal decorative art going through a phase of transition, in which Timurid-Safavid *islīmī-khatā'ī*, Indian indigenous and European designs can be identified.

A further change in the *jālī* repertoire can first be noted at the Shish Mahal of 1631-34 at the Lahore Fort. The central largest *jālī* of the palace is set in an arch-shape opening (plate 9). The white marble screen is divided into three prominent vertical panels; there are further subdivided horizontally, with a window in the lowest portions. Most of the screens have simple geometrical designs of trellises (allowance must be made that some of these may be replacements). In the central lower-panel of this *jālī*, panels with single plant motifs frame the window. Similar combinations of rectilinear and curvilinear patterns were utilized since the early Mughal period, for instance, at the Tomb of Mohammed Ghaus of 1565 at Gwalior and at Salim Chisti's Tomb at Fatehpur Sikri (plate 8). Above the central window, there is cloud collar motif with twisting ends attached to the grill frame: the flanking windows have a constructed multi-foil arches superimposed on the geometrical layout. This cloud-collar design is also employed for the pierced lattice screen of the Naulakha Pavilion and the marble pavilion in the Shah Jahan quadrangle at Lahore Fort. The single plants of the lower center panel grow naturalistically as if painted, not in stone. Single plants were a subordinate decoration during the second half of sixteenth century; but from the last decade of this century, this subject with less prominent appearance is noted in the borders of miniatures and by the beginning of the second decade of the seventeenth century, these were prominently utilized for border decoration (Stronge, 2002; Walker, 1998).^{xiv} It can be suggested that the single plant motif, was initially a secondary motif in Mughal art, but inspired by European herbal illustrations of c. 1620 the Mughal artist then used this subordinate theme, enlarged, for major decorative purposes.

The floral spray became a trademark of Mughal decorative repertoire of the Shah Jahan era (1628-1658). They are found in the architecture of his reign on marble dadoes, rectangular panels of facades and painted on interior walls even muqarnas. Such large plants used for Mughal *jālī* in white marble at the Shish Mahal are also found at the Naulakha pavilion of 1631-1632 at Lahore Fort. Here two plants are side-by-side in rectangular panels, naturalistically growing and aesthetically covering the whole area (plate 10).

Muthamman Burj of 1631-40 at Agra Fort and the Diwan-e-Khass of 1639-48 at the Red Fort, Delhi also have similar lattices but a new exotic tracery is introduced at the latter site (plate 11). The recessed, arch-shaped *mizān-i-adl* wall of Diwan-e-Khass is divided horizontally into two parts of unequal size: the upper portion shows cartouches containing stylized vegetal and single plant motifs in relief carving while the lower portion has three vertical *jālī* panels that are further divided horizontally making six panels of unequal size lattices. The two vertical panels flanking the center are identical and have a lattice pattern containing a stylized plant in each large cartouche and geometrical network in its smaller cartouches (plate 12). The single plant is stylized and symmetrical rather than naturalistic, and does not trespass its latticework boundaries. The lattice pattern itself is taken from European sources, but the rendering of the single plants with rhythmic intervals of small geometric net cartouche is totally within the creative ability of the Mughal artisans (Walker, 1998, p. 87).

Another Mughal pattern in the central lower panel of this same Diwan-e-Khass fretwork screen (plate 11) has a central opening surrounded by a border of cartouche shaped compartments. Each of the two vertical cartouches flanking the center has a vase with springing foliage that spreads to cover the upper area of the segment. A similar motif is found in the *jālīs* of the tympanum in archways connecting to the halls of Diwan-e-Khass of 1628-35 at Agra Fort (See Nath, 2005, plate 3/54). This theme developed side by side with the single plant motif and it is basically an indigenous creation of Mughal artists. Single vases were used for decorative purpose since the early Islamic period and can be seen in mosaic at the interior of the first Islamic monument — the Dome of the Rock of 691 at Jerusalem — and as was ornamental subject seen prominently in fifteenth century Timurid architecture. This theme, *ghatā-pallāvā*, is an ancient Hindu one (Nath, 1994, p. 638); the *guldastā* (bunch of flowers and leaves) was used by Jahangir's artisans in fresco painting and inlay. However, the vase motif received more creative use by the Shahjahanian artisans and was first applied to *jālī* art in the period of Shah Jahan.

A third type of ornamental cartouche is found in the corners of the same panel of the Diwan-e-Khass perforated screen (plate 13). The outline of the ovoid cartouche has leafy tendril naturalistically growing from it that encroaches upon the geometrical network.

The inner design shows a delicate small vase placed on a pedestal with stylized floral and leaf motifs springing from it that cover the whole area. When this cartouche is rotated 180° to the left a lyre shape becomes the centre of interest among the stylized floral and leaf motifs. Whatever the position the component that attracts attention is the shape of the cartouche, the lyre shape and the non-naturalistic growth, which is not found either in the Indian indigenous or contemporary Iranian art. This cartouche resembles a pattern employed on the inner surface of the dome of Asif Khan of 1645 at Lahore in incised stucco. Similar leafy tendrils are also growing from the cartouche of Asif Khan but the interior design is different from the Diwan-e-Khass *jālī* example. However, in both the cases the cartouche as well as the inner design has European influence. Brown (1956, p. 107) suggests for the design found at Asif Khan that it was inspired by textiles of Italy or Sicily, whereas Brend (1991, p. 209) suggests that the cartouches are influenced by European goldsmiths. According to scholars (Brend, 1991; Michell, 2007; Okada & Joshi, 2005) European jewelers and artisans were present at the Mughal court of Shah Jahan, which became the source for all these European elements.^{xv}

The *muhajjar* encircling around the graves in the interior of the Taj Mahal of 1647 at Agra represents the epitome of Mughal stone fretwork (plate 14). The ornamental designs of this railing are the prevailing Mughal decorative vocabulary then in vogue. It has a lattice screen with European cartouches similar to the ones at the Diwan-e-Khass. "According to Sir John Marshall this is the only case in which Italian influence can be discerned in the decorations of the Taj" (Smith, n.d., p. 174). A new luxuriant quality is achieved by applying *pietra dura* (*parchinkārī*) on the framing border of the screen. It is applied to acanthus leaves facing each other in the form of brackets — another European influenced motif of Shah Jahan period.

After the reign of Shah Jahan, the art of *jālī* (making slipped unto) decline, there are no prominent examples from the period of Aurengzeb. It did not totally vanished but found some patronage at places in Rajasthan like Jaipur and Jodhpur. The pierced latticework of the early Mughal period is a good source for the study of the development of Mughal ornamental vocabulary.

Gradual improvement and progress in design and technique of perforated screens shows how the Mughal artisans took this usually unnoticed functional form to an art par excellence.

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PLATES

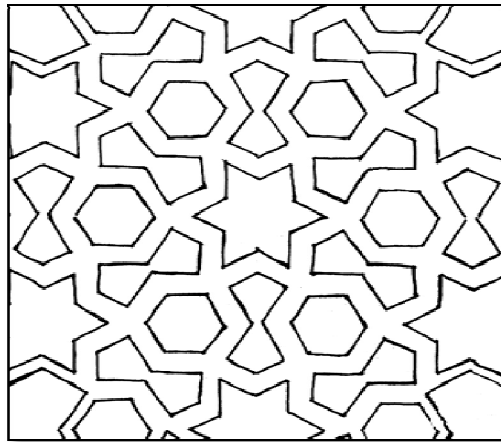
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Plate 1. Geometrical pattern of the white marble *jālī* of Alai Darwaza of 1305 at Delhi, with star-hexagon shape interwoven with triangles and squares. (5"×7") Source: Drawn by the author after Keith Critchlow, *Islamic Patterns: An Analytical and Cosmological Approach* (London: Thames & Hudson, 1976), 124.

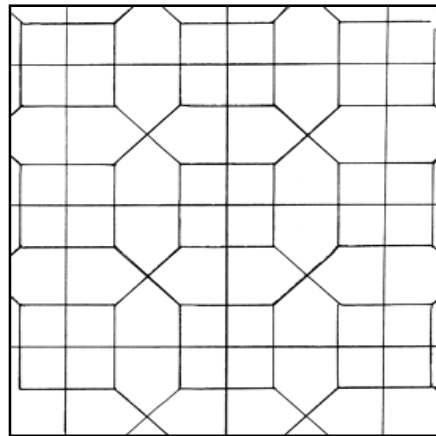


Plate 2. White marble *jālī* geometrical pattern with interlacing octagons from the Alai Darwaza of 1305 at Delhi. (5"×7") Source: Drawn by the author after Keith Critchlow, *Islamic Patterns: An Analytical and Cosmological Approach* (London: Thames & Hudson, 1976), 144.

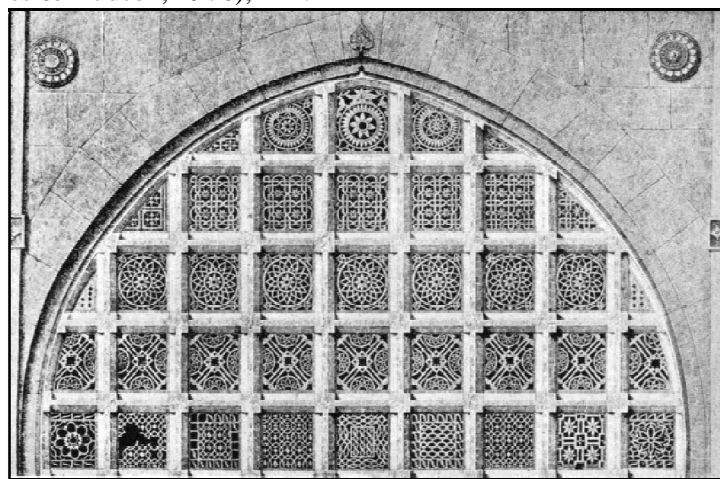


Plate 3. Arched screen with square panel composition at the Mosque of Sidi Sayyid of 1572-1573, Ahmadabad. (5"×7") Source: Vincent A. Smith, *A History of Fine Art in India & Ceylon*, Oxford: Oxford University Press, 1911. 3rd ed. Revised by Karl Khandalavala (Bombay: D. B. Taraporevala Sons & Co., n.d.), plate 173A.

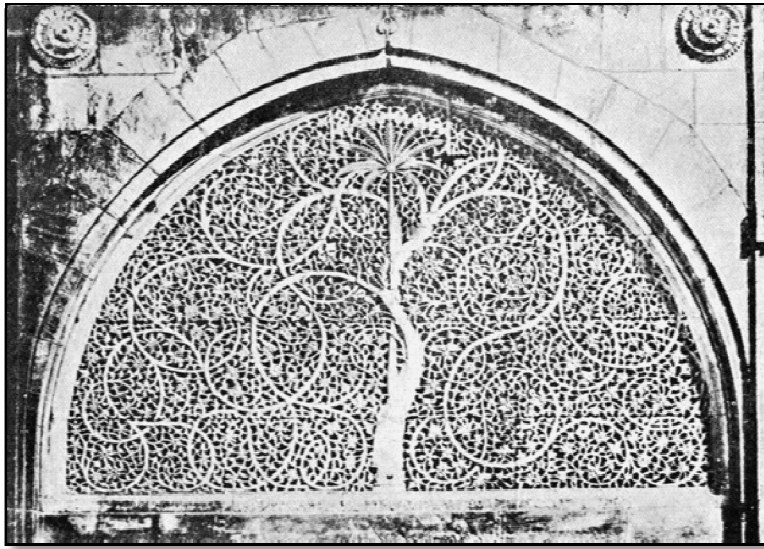


Plate 4. *Jālī* with tree of life motif from the Mosque of Sidi Sayyid of 1572-1573 at Ahmadabad. (5"×7") Source: R. Nath, *History of Decorative Art in Mughal Architecture* (Delhi: Motilal Banarsidass, 1976), plate XXXVII.

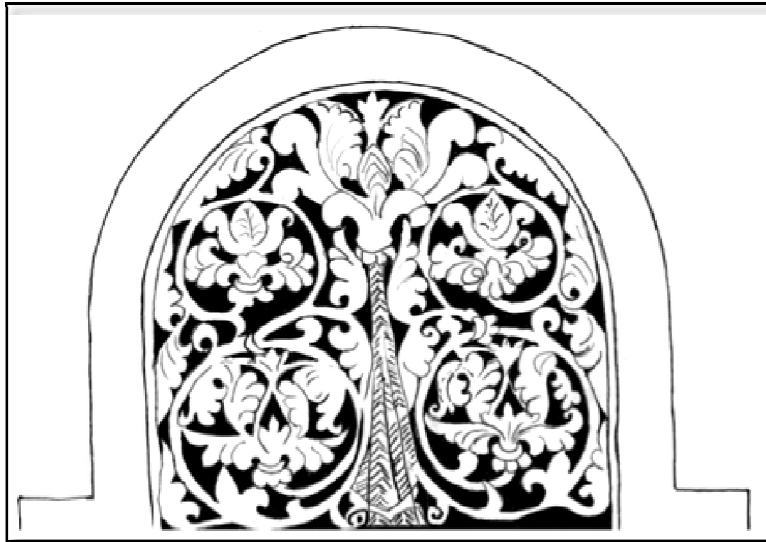


Plate 5. Perforated window from the Palace of Qasr al-Hair Gharbi near Palmyra, showing Tree of life motif with half palmettes and acanthus leaves on vine. (5"×7") Source: Drawn by the author after, Dominique Clevenot, *Ornament and Decoration in Islamic Architecture* (London: Thames and Hudson, 2000), plate 191.

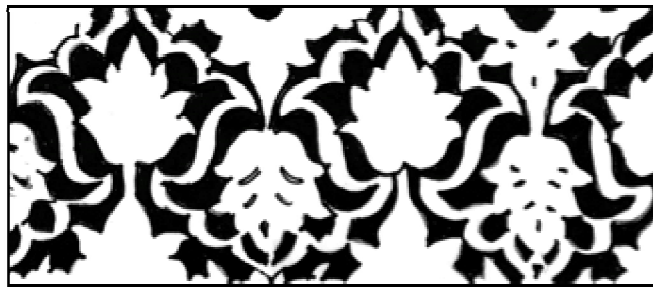


Plate 6. Reciprocal cloud-collar motif in lattice screen of the Tomb of Shiekh Muhammed Ghauth of 1565 at Gwalior. (5"×7") Source: Drawn by the author after, R. Nath, *History of Mughal Architecture*, Vol. I (Atlantic Highlands: Humanities Press Inc., 1982), plate CLIV.

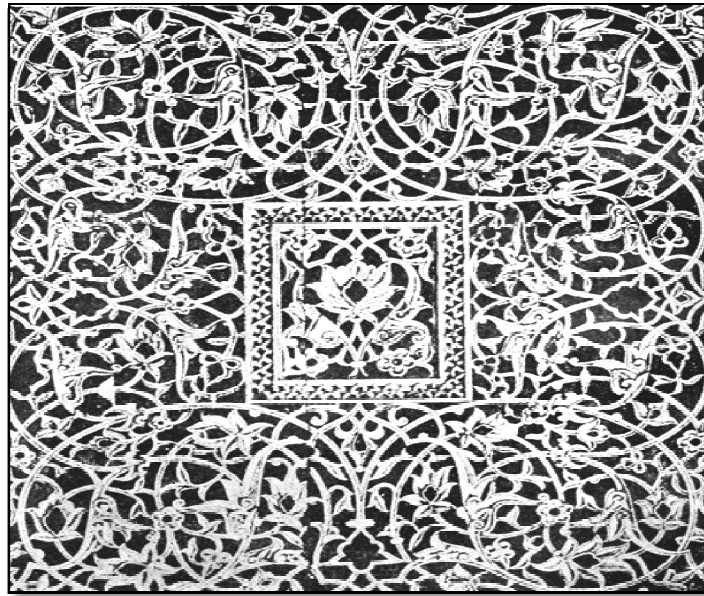


Plate 7. Pierced screen with Timurid *islāmī-khatā'ī* design from the Hawa Mahal, a part of the royal palace of Fatehpur Sikri of 1565-1570. (5"×7") Source: R. Nath, *History of Decorative Art in Mughal Architecture* (Delhi: Motilal Banarsidass, 1976), plate XL.

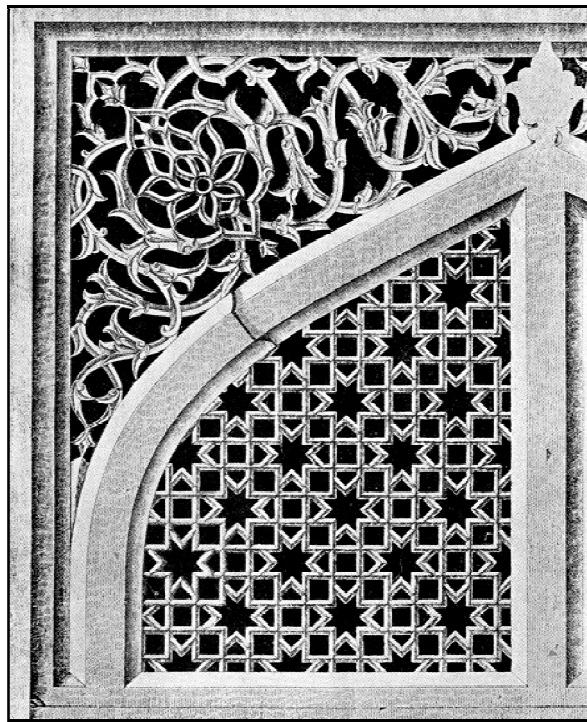


Plate 8. One of the fretted trellis with geometrical and curvilinear designs from the verandah *jālīs* of the Tomb of Salim Chisti of 1571-1581 at Fatehpur Sikri. (5"×7") Source: Vincent A. Smith, *A History of Fine Art in India & Ceylon*, Oxford: Oxford University Press, 1911. 3rd ed. Revised by Karl Khandalavala (Bombay: D. B. Taraporevala Sons & Co., n.d.), plate 174A.



Plate 9. Central largest white marble *jālī* screen of Shish Mahal of 1631-34 at the Lahore Fort. (8" x 10") Source: Photograph by the author.



Plate 10. Single plant motifs from the white marble perforated screen of the Naulakha pavilion of 1631-1632 at Lahore Fort. (5"×7") Source: Photograph by the author.



Plate 11. Exuberant *jālī* of the arch-shaped *mizān-i-adl* wall in the Diwan-e-Khass of 1639-48 at Red Fort, Delhi. (5"×7") Source: Shanti Swarup, *The Arts and Crafts of India and Pakistan* (Bombay: D. B. Taraporevala Sons & Co., 1957), plate CCV.



Plate 12. Vertical *jālī* panel composed with lattice pattern containing stylized plant motifs. Detail of the lattice screen in Diwan-e-Khass of 1639-48 at Red Fort, Delhi. (5"×7") Source: Drawn by the author after George Michell, *The Majesty of Mughal Decoration: The Art and Architecture of Islamic India* (London: Thames and Hudson, 2007), 105.

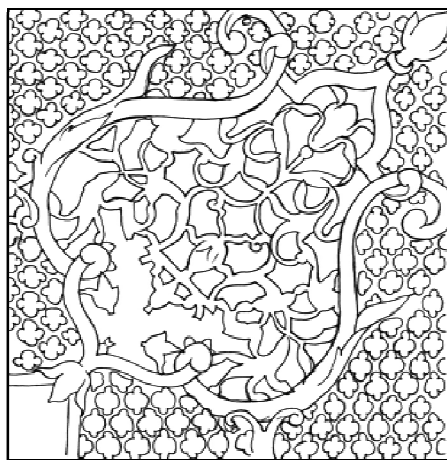


Plate 13. Ovoid cartouche of the lattice screen of Diwan-e-Khass of 1639-48 in Red Fort, Delhi. (5"×7") Source: Drawn by the author after George Michell, *The Majesty of Mughal Decoration: The Art and Architecture of Islamic India* (London: Thames and Hudson, 2007), 119.

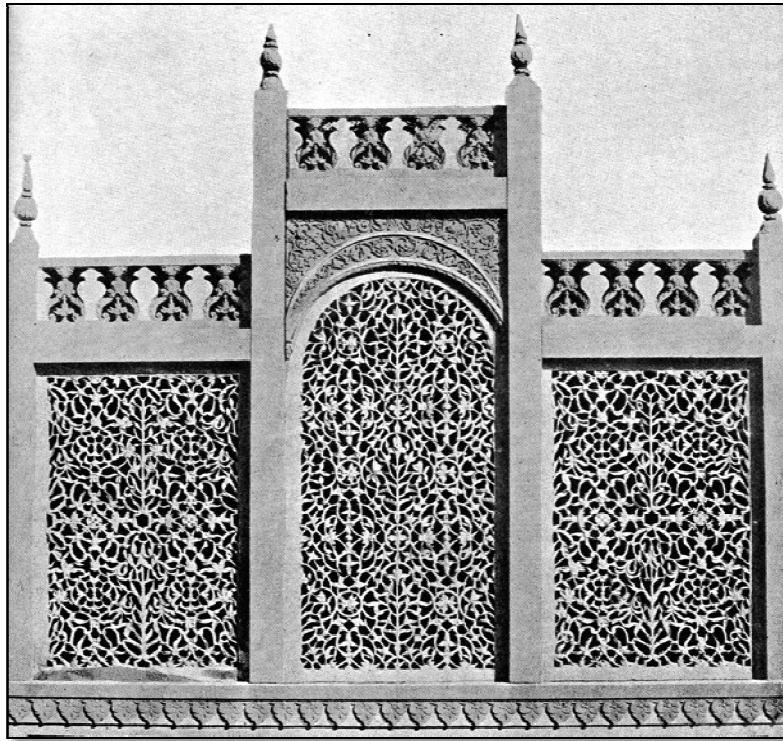


Plate 14. White marble pierced railing encircling the cenotaphs in the interior of the Taj Mahal of 1647 at Agra. (5" × 7") Source: Vincent A. Smith, *A History of Fine Art in India & Ceylon*, Oxford: Oxford University Press, 1911. 3rd ed. Revised by Karl Khandalavala (Bombay: D. B. Taraporevala Sons & Co., n.d.), plate 175.

Footnotes

ⁱ Gardezi (1993) mentions that demand for these art pieces has decreased and commercial and industrial products have consequentially replaced the traditional ones. However, there are still a few artisans who pursue the traditional art and along with them are patrons of aesthetic taste as well who purchase these lattice screens carved in the true style similar to those of the Mughals. Some workers are making reproductions of the red sandstone railings and pierced screens of the Tomb of Jahangir at Shahdara near Lahore for the Conservation and Restoration Department.

ⁱⁱ Nath (1988) refers to *Visnu-Dharmottara-Purāna* III Khanda, the classical text devoted to *Śilpā* in which the terms for lattice screens are in the chapter of temple architecture. Nath (1982) dates *Kāśyapā-Śilpā* 1450 and says that neither the *Śilpā* of 650, 1025, and 1200 nor of 1315 mention *jālī*.

ⁱⁱⁱ Nath (1982) states that *Parimāna-Maṅjarī* of Malla, a treatise on woodwork, belonging to the early eleventh century mentions *jālīs* in its *slokās*.

^{iv} In *Kāśyapā-Śilpā* of 1300 the separate chapter on *jālīs* was entitled *Jālaka-Laksanam* which had 15 principles mostly unintelligible and the narrative description does not provide illustrations, neither any detail of material nor the technical usage (Nath, 1988).

^v Smith (n.d.) the lattices at Belur are twenty-eight in number derived from the Early Chalukyan Style of Southern India; See Tadgell (1990, pp. 137-138) plates 98, 100b, 122 and 158c for lattices of pre-Islamic Hindu period.

^{vi} According to Milwright (2010) the term stands for geometric interlaced strap-work ornament and in Persian Islamic architecture it exists in various media, whereas Wulff (1966, p. 87) uses this term for wooden lattices similar to Blair (2010); Necipoğlu (1992, p. 54) mentions *gereh-sāzī* designs with reference to a recently published *tumār* in Tehran with colored geometric drawings for *bannā'ī* brick ornament.

^{viii} Clevenot (2000, p. 216) says that perforated window grilles like that of the Palace of Qasr al Hair al-Gharbi near Palmyra are derived from Byzantine architecture; Creswell (1958, pp. 22 and 79, plate 16) illustrates and writes about pierced screens of the Dome of the Rock and the Great Mosque at Damascus.

^{ix} Nath (1976, p. 56, plate XXXVII) on one hand has called the tree of life motif, arabesque and on the other hand he (1988, p. 105, plate LXXIX) has used this term for square shaped panels superimposed on curvilinear naturalistically growing vine with abstracted kidney shaped leaves attached to it.

^x See "Pierced Window screen" in the Metropolitan Museum of Art, Collections.

^{xi} *Islīmī-khatā* stands for the Islamic decorative style in which *islīmī*, comprised of split leaf and vine motif, is superimposed on *khatā*: relatively delicate vine carrying floral, bud and leaf motif.

^{xii} Stronge (2002, p. 19) says that the conquest was in 1572; Date of Fatehpur Sikri's royal residences according to Nath (1988, p. 95) is 1572 to 1585; Dates for the construction of Sidi Sayyid Mosque given by Sahai (2004, p. 59) is 1572-1573; by Brown (1956, p. 56) is 1510-1515 and by Tadgell (1990, p. 179) is 1575.

^{xiii} See Sahai (2004, p. 54), Tomb of Shah Ahmed Khattu of 1446 at Sarkhej which has an arcaded exterior with perforated screens; Tadgell (1990, p. 179, plate 201b) gives a drawing that shows façade of Rani Separi Tomb of 1505 at Ahmedabad comprised of pierced screens set in rectangular openings.

^{xiv} See Stronge (2002, pp. 103-105, plates 69-70 and 86), plate 69 is dated 1590-1600, plate 70 of 1600 and plate 86 of 1605, all these three have single plant motif in their borders but has been mentioned by Walker (1998, p. 86) that these single plants had not yet become part of the regular ornamental vocabulary till 1628.

^{xv} Michell (2007, p. 119) mentions lyre motif as Italian in origin; Okada & Joshi (2005, p. 30) confirm the presence of European artisans with the names of some of them.