

Research on the empowerment of the Ming and Qing Dynasty fine metal workman's technique to the contemporary jewelry market

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ABSTRACT

Fine metal workman's technique, as a treasure of traditional Chinese metalworking, has developed over thousands of years and integrated the essence of gold-making techniques from various ethnic groups, forming a unique artistic style. This paper reviews the historical evolution of fine metal workman's technique, from its origin to its peak in the Ming and Qing dynasties, and then to its revival and challenges in modern times. Fine metal workman's technique is an outstanding representative of ancient Chinese craftsmen's wisdom and skills with its delicate and exquisite modeling and rich cultural connotations. In modern jewelry design, fine metal workman's technique has found new applications and developments, which not only pay tribute to and inherit traditional culture but also integrate modern aesthetics and design concepts. However, the inheritance and development of fine metal workman's technique still face many challenges, such as high difficulty in production techniques and insufficient market recognition. By analyzing the history, technical characteristics, artistic style, and market status of fine metal workman's technique, this paper explores its application prospects and development strategies in contemporary jewelry design, aiming to provide new ideas and references for the inheritance and innovation of fine metal workman's technique.

KEYWORDS

Fine metal workman's technique; technical characteristics; artistic style; cultural connotations and social functions; application in modern jewelry design

1 Introduction

1.1 Research background

The history of fine metal workman's technique can be traced back to the distant Shang and Zhou dynasties, which was an era when metal smelting technology came to its fore and the wisdom and creativity of craftsmen were integrated. In the Shang and Zhou dynasties, the prosperity of metal technology provided fertile soil for the birth of silk technology. Craftsmen began to try to make precious metals into filaments, and created delicate and layered decorations through weaving and winding. Although these early works are difficult to find their true appearance, but they undoubtedly laid the foundation for the glory of the later fine metal workman's technique.

In the Warring States Period, the emergence of gold and silver fault technology further promoted the development of flower silk technology. In the Tang Dynasty, China ushered in an unprecedented period of cultural prosperity. The opening of the Silk Road promoted the exchange and integration of eastern and Western cultures. In this context, the fine metal workman's technique developed rapidly. The craftsmen of the Tang Dynasty not only inherited the essence of the previous generation, but also had the courage to innovate and actively absorbed the essence of foreign gold and silver patterns, especially the artistic elements of Central Asia and West Asia, creating the unique craft style of "gold and silver translation". This style is inlaid with gold and silver slices on the surface of the utensils, and then carved a delicate pattern, combined with the silk technology, making the works more three-dimensional and changeable in shape and more exquisite and complicated in techniques, thus becoming the representative of the court art and deeply loved by the royal family.

During the Ming and Qing dynasties, the fine metal workman's technique reached an unprecedented height and was known as one of the eight wonders of Yanjing. During this period, the social economy was prosperous, the handicraft industry was highly developed, and the communication between the court crafts and the folk crafts became increasingly frequent. In this context, the fine metal workman's technique is no longer limited to the court, but gradually to the folk, become an indispensable part of the life of the general people. Palace craftsmen and folk artists learn from each other, and jointly promote the popularization and development of flower silk technology. The silk works of the Ming and Qing Dynasties, whether imperial court or folk masterpieces, show superb skills and complicated modeling design. They not only reflect the exquisite skills and infinite creativity of the craftsmen, but also bear the rich cultural connotation and the spirit of The Times.

1.2 Research meaning

Silk technology plays an important role in Chinese traditional metal technology. This craft not only reflects the wisdom and skills of ancient Chinese craftsmen, but also carries rich cultural connotation and historical value. The fine metal

workman's technique products are unique for their slender, exquisite shape and full sense of hierarchy. Each work is a work of ingenuity, showing the unique aesthetic and technological level of China.

The fine metal workman's technique provides a rich source of inspiration and innovation space for contemporary jewelry design. Designers can use modern design thinking, deconstruct and reconstruct traditional elements, and skillfully integrate the essence of fine metal workman's technique into the design of each type of jewelry, so as to create jewelry works that retain both traditional charm and modern sense. This innovative design not only meets the demand of consumers for personalized jewelry, but also injects new vitality into the jewelry market.

The application of fine metal workman's technique in jewelry design not only enriches the product types and styles of the jewelry market, but also promotes the diversified development of the jewelry market. With the continuous improvement of consumers' quality and aesthetic requirements for jewelry, the traditional gold and silver jewelry has been difficult to meet the diversified needs of the market. With its exquisite technology and unique cultural connotation, the silk technology provides a new development direction and growth point for the jewelry market. By combining other jewelry techniques such as inlaying and carving, the fine metal workman's technique can create more colorful jewelry works to meet the different needs of consumers.

The significance and value of the study in contemporary jewelry design is not only reflected in inheritance and innovation, enhancing artistic value, meeting diversified needs and promoting industrial development, but also reflected in multiple dimensions such as cultural value, economic value, social value and aesthetic value. This research is of great significance and value for promoting the inheritance and development of Chinese traditional culture, enhancing the competitiveness of the jewelry industry and enriching people's cultural life.

1.3 Revival and importance in modern jewelry design

On the bright stage of contemporary jewelry design, the fine metal workman's technique is surging quietly, giving a new life and vitality to this long-history technology. With the continuous development of modern jewelry design, fine metal workman's technique is gradually integrated into it and becomes an important means to enhance the artistic value and cultural connotation of jewelry. Modern jewelry designers, with their keen fashion touch and profound cultural heritage, skillfully integrate the essence of the intangible cultural heritage of flower fine metal workman's technique into the design of each type of jewelry. They use modern design thinking to deconstruct and reconstruct traditional elements, so that the silk works not only retain their original complicated and delicate and handmade charm, but also add a modern sense and fashion atmosphere, which perfectly fits the contemporary people's pursuit of personalized and quality life.

The revival of fine metal workman's technique in modern jewelry design not only reflects the tribute and inheritance of traditional culture, but also the exploration and innovation of modern design language. With its unique artistic charm and profound cultural connotation, it injects new vitality and inspiration into the field of modern jewelry design. Whether it is necklaces, earrings or other jewelry works, the fine metal workman's technique has won the love of consumers and the market recognition with its exquisite skills and unique style. At the same time, the flower silk process often reflects with other jewelry processes, jointly performing a visual feast, showing its infinite possibilities in modern jewelry design.

2 Development of fine metal workman's technique

2.1 The origin and development of the fine metal workman's technique

The origin of the filament process dates back to ancient times, when people were already able to use simple tools to process the metal. In the Warring States Period, the emergence of gold and silver error technology marked the initial formation of fine metal workman's technique. The gold and silver error process formed exquisite patterns by inlaid gold or pieces on the surface of copper ware, which was mainly used at that time to make weapons, ritual vessels and daily necessities. In the Han Dynasty, the process of gold and silver was further developed, the use of gold and silver was more widely used, and the patterns became more complex and fine.

In the Sui and Tang dynasties, the flower silk process began to gradually mature, and the production of gold and silver ware reached a new height. Craftsmen not only inlaid gems on the gold and silver ware, but also began to try to weave the gold and silver silk into various patterns, making the decorative effect even more gorgeous. By the Song and Yuan dynasties, the fine metal workman's technique had been quite developed, and the production technology of gold and silver ware was more exquisite, and the pattern design was more diversified.

About the historical development of fine metal workman's technique, in the *Development and Application of filament Mosaic Technology in Jewelry* written by Wang Jia, the article sorts out a relatively clear historical context for the development of ancient filament Mosaic technology in China through the analysis of previous research results and existing archaeological data. The first is to solve the problem of origin: filament and inlay are two different processes. Among them, the earliest unearthed product was found in the Neolithic Age, and the metal filament process was first

unearthed in the Shang Dynasty. Flower silk and inlay appeared together in the late Warring States Period, and the production techniques have been basically formed. From the Han Dynasty to the Tang Dynasty, the silk inlay making skills slowly developed, and the craft became more and more perfect. In the hundreds of years of development, the works lacked the heart. The aesthetic of Song Dynasty is simple and elegant, and the complicated silk inlay is not valued. In the Yuan Dynasty ruled by ethnic minorities, they liked gold and decorative silk and developed rapidly. In the Ming and Qing dynasties, the stratification of female jewelry and the technology of silk inlay was the head of the concubines in the court, and the green and blue also developed rapidly, leaving many excellent technological treasures for the later generations^[1]. Therefore, it is of great value and significance to study the fine metal workman's techniques works of Ming and Qing dynasties.

2.2 Fine metal workman's technique of the Ming and Qing Dynasties

The Ming and Qing dynasties were the heyday of the development of fine metal workman's technique. The flower silk process in this period not only reached an unprecedented height in technology, but also became more colorful in artistic expression. The craftsmen of the Ming and Qing Dynasties combined the silk process with carving, inlaying and other techniques to create many exquisite gold and silver jewelry and artifacts. These works not only reflect the superb skills of the craftsmen, but also reflect the aesthetic taste and cultural pursuit of the society at that time.

The Ming Dynasty was the golden period of flower silk technology. At this time, the flower silk process not only reached its peak in technology, but also became diversified in artistic style. In the production of silk, Ming Dynasty craftsmen used more complex techniques to make silk, such as rubbing silk, twisting silk and inlay, which made the shape of silk ornaments more vivid and delicate. The silk jewelry of Ming Dynasty is mostly themed with natural elements such as flowers and birds, insects and fish, reflecting peoples love and yearning for nature at that time.

In the Qing Dynasty, the craft of silk became more and more skilled, especially under the influence of the court and dignitaries, the production of silk jewelry reached the extreme. The flower fine metal workman's technique of the Qing Dynasty not only pays attention to the exquisite technology, but also emphasizes the expressive force of art. Many craftsmen incorporate new elements into the flower silk design, such as western decorative styles, forming a unique "foreign silk" craft. There were many kinds of flower silk jewelry in the Qing Dynasty, including hairpins, earrings, necklaces, etc., which were often used for the decoration of the royal family and the noble family.

"Analysis of Beijing Silk Mosaic in Ming and Qing Dynasties" written by scholar Xu Zhonghai discusses the introduction of the whole course of background filament inlay. In the historical development of Chinese fine gold technology, the silk Mosaic in Beijing in Ming and Qing Dynasties can be called the peak, and a large number of art treasures emerged in this period. From the political and cultural background of that time, the article takes the Wanli Emperors Jinshan wing fan crown and the Qianlong Emperors Jin Yonggu cup as the starting point, integrates the treasures of these two periods, and analyzes the national treasure skills in the aspects of shape, pattern and craft, so as to inspire the current art and handicraft creation^[2].

In 2020, the author ZhanJing qi wrote the study of the Ming and qing dynasties hairpin, first traced the hairpin from the ancient times to the development and change of the Ming and qing dynasties, and subdivided into the origin, early development, middle development, mature to heyday four period to understand the hairpin inheritance and change, among them, the Ming dynasty and the qing dynasty is the last two feudal dynasties, is also the heyday of hairpin development, this paper selected the Ming dynasty and qing dynasty hairpin, to explore its development and change, understand the hairpin inheritance and innovation. There are many Ming and Qing dynasty hairpins retained in kind, and hairpins are also recorded in some tomb murals, literati paintings, poems and historical materials. Through the comparison and analysis of physical and graphic and text materials, the article summarizes the development and changes of hairpins in the Ming and Qing dynasties in modeling, decorative patterns and production techniques. In the Ming and Qing dynasties, the hairpins were rich in shapes, using various materials and decorations. According to the different shapes of the hairpins, the hairpins were divided into six types: geometric hairpin, flower shape hairpin, fancy hairpin, cordyceps flower hairpin, dragon and phoenix hairpin and green feather hairpin. The most distinctive feature of the hairpin is the decorative pattern, which is divided into five parts: plant pattern, animal pattern, spirit and animal pattern, auspicious pattern and special pattern of the Ming Dynasty. And the most can show the shape and pattern is the production process, this article is clearIn the Qing Dynasty, three basic processing processes: making and thinking process, inlay technology, chisel technology and two processes that developed to the peak: filament process and diancui process. Finally, the influence of historical development factors, social character factors and national culture factors on the development and change of hairpins is summarized and analyzed. The hairpins of the Ming and Qing dynasties inherited the excellent traditional culture and skills of the previous dynasties, and were changed and innovated on this basis. The Ming Dynasty hairpins are luxurious and elegant, while the Qing Dynasty hairpins are beautiful and lively. The two generations of hairpins have not only the traditional beauty, but also the style and aesthetics created by their own times

and culture. Hairpins in the Ming and Qing dynasties are a small part of the jewelry culture of the two eras, from which we can glimpse a small corner of the decorative aesthetic world of the two eras, and we hope to make some jewelry creation in the future^[3].

The technical characteristics of the gold flower silk jewelry in the Ming and Qing dynasties are mainly reflected in the fine production technology. The flower silk process covers the eight steps of "pinching, filling, stacking, stacking, weaving, weaving, saving and welding", and all these steps require the craftsman to have rich experience and exquisite skills. In the process, the craftsman will pull gold or silver into hair-like wires, and then weave them and inlay them into a variety of exquisite jewelry. These jewelry are not only exquisite in shape, but also the details show the heart and wisdom of the craftsman.

In terms of artistic style, the gold flower silk jewelry in the Ming and Qing dynasties reflects the strong national style and characteristics of The Times. The silk technology of Ming Dynasty is characterized by "fiber" and "transparent", and most of the works show the beauty of ethereal and clear feeling.

For example, the "Golden Gold Flat Dragon Wing Good Crown" collected in Dingling Museum, which woven uniform and fine "empty lantern" flowers, as thin as yarn, can be called a model of fine metal workman's technique in the Ming Dynasty. In the Qing Dynasty, the fine metal workman's technique paid more attention to "fine" and "fine", and most of the works showed the characteristics of gorgeous and complicated, neat and delicate. For example, the Palace Museums collection shows the luxurious and delicate features of Qing Dynasty jewelry with fine silk technology and rich gem inlay.

The gold flower silk jewelry in the Ming and Qing dynasties, not only has a very high artistic value, but also contains a rich cultural connotation. These jewelry are often endowed with the meaning of auspiciousness and wealth, and become an important carrier for court nobles and people to express good wishes and pray. At the same time, these jewelry also reflected the aesthetic tendency and fashion trend of the society at that time, and became an important material to study the social culture of the Ming and Qing Dynasties.

The gold and silk jewelry in the Ming and Qing Dynasties had a profound influence on the later generations.

On the one hand, they provide valuable technical inheritance and artistic reference for the fine metal workman's technique of later generations. On the basis of learning and drawing lessons from the fine metal workman's technique of the Ming and Qing Dynasties, many craftsmen of later generations have constantly innovated and developed, forming new artistic styles and technical characteristics.

On the other hand, the gold flower silk jewelry in the Ming and Qing Dynasties also became an important part of the traditional Chinese culture, which had a positive impact on the cultural inheritance and development of the later generations. They not only show the profound cultural heritage and aesthetic pursuit of the Chinese nation, but also provide a wealth of inspiration and materials for the design and production of jewelry in later generations.

In the production of royal jewelry, fine metal workman's technique often reflects more exquisite skills and richer cultural connotation. Royal jewelry not only in the design of the ultimate luxury and fine, but also in the choice of materials, the use of pure gold, gems and other valuable materials. In the production process, the royal craftsmen often need to follow the strict technical standards and aesthetic requirements, making each piece of work become a unique work of art.

The flower silk process of the royal jewelry not only shows the dignity and authority of the royal family, but also reflects the highest technological level of the society at that time.

In contrast, folk silk jewelry pays more attention to practicality and popularity. Although the craftsmanship may not be as fine as royal jewelry, folk jewelry is also rich and colorful in pattern design and moral expression. Under limited conditions, the folk craftsmen are still able to create both beautiful and practical jewelry, which are often closer to the people's lives, reflecting the aesthetic taste and living customs of the people. The fine metal workman's technique of folk jewelry also carries a profound cultural significance, and is an indispensable part of the study of folk culture in the Ming and Qing Dynasties.

The promotion function of the royal flower silk process is mainly reflected in the cultivation of technological personnel and the innovation of technological technology. The royal family set up a special workshop, gathering the best craftsmen of that time, providing them with a good working environment and rich resources. The high requirements of the royal family for the technology prompted the craftsmen to constantly explore and innovate, and promoted the continuous progress of the flower silk technology. In addition, the royal family's attention to the fine metal workman's technique has also promoted its status in the society, making this technique to be widely spread and applied among the people.

Through the analysis of the origin and evolution of the fine metal workman's technique, this traditional technique has been developed and innovated to different degrees in different historical periods. The gold silk jewelry in the Ming and Qing dynasties, on the basis of the previous generation of technology, combined with the social and cultural background and aesthetic needs of that time, formed a unique artistic style and cultural connotation. These historical accumulation provides a rich source of inspiration for modern jewelry design, and also enables the fine metal workman's technique to continue to inherit and develop in contemporary times.

2.3 The current situation of the filament process

Silk Mosaic is a national intangible cultural heritage and a treasure of Chinese history and culture. Although its artistic value has been widely recognized, this process is still faced with the danger of the disappearance of the inheritance of skills and the gradual marginalization of the process, as well as the imbalance of talent structure, the conflict between production mode and market demand, and the integration of tradition and modernity. In 2024, "Status Analysis and Countermeasures Research on the Protection of Silk Mosaic Technology" written by Jiang Suyuan et al., in order to deal with this series of problems, the government, local and individual levels have adopted a series of protection and inheritance measures, and made many achievements^[4]. It mainly carries out the relevant research on the inheritance of silk technology, and calls for the comprehensive protection strategy to be put forward from the perspective of regulation formulation, education and training, and technological innovation, so as to realize the cultural and social value of silk technology in the contemporary society.

In order to protect and inherit the intangible cultural heritage more effectively, many scholars have put forward the relevant methodology to carry out the inheritance and protection from multiple angles and in multiple dimensions. Gao Cong and Hu Liangliang discussed the Innovation and Development of traditional Silk Mosaic Technology, selected the technique as the research case, and deeply analyzed the key elements and challenges of their inheritance. By exploring the basic ways of its innovative development, it aims to arouse the public's attention to the inheritance dilemma of this skill. At the same time, it also puts forward the possibility of combining flower silk inlay with emerging media such as modern design, film and television, animation and cultural and creative industries, in order to activate and expand its inheritance path^[5].

For the present situation of filament process in the modern design market, the researchers suggest from the perspective of cultural creative industry, xiao-yan hu wrote the development and promotion of —— silk Mosaic, for example, also discusses, filament process since June 2008 was listed in the national intangible cultural heritage list. However, due to the high difficulty of the production process, complicated steps, time consuming and effort, it is mainly retained in Beijing and Chengdu. Cultural creation is the combination of culture and creativity, and the ideas of culture and silk creation are inlaid with the same origin on the basis of culture. This paper explores the combination of silk intangible cultural heritage and modern cultural creation ideas, and tries to explore and promote the method of silk Mosaic with the concept of cultural creation, so as to make it get better development^[6].

In recent years, the influence of fine metal workman's technique in the jewelry market has gradually emerged. However, there are significant differences between the refinement of current market and traditional filament products. In spite of this, the fine metal workman's technique still enters the jewelry market in a name, and is gradually recognized by consumers. As one of the outstanding representatives of Chinese traditional metal technology, its exquisite craftsmanship reflects the highest level of Chinese traditional handicraft. However, in the process of its development and inheritance, it faces several challenges. The paper "On The Integration Innovation of filament Mosaic and Modern Jewelry", published in 2024, examined the application of filament inlay in modern jewelry design, revealed the inspiration of its decorative modeling in the inspiration of modern jewelry design, and pointed out the exquisite performance of this process in jewelry products^[7]. Based on this, the paper proposes that the integration and innovation of silk inlay technology and modern jewelry should be explored from multiple dimensions such as culture, technology, market and talent.

3 Artistic characteristics and artistic style

3.1 The characteristics of skill

The wire-pinching technique is famous for its fineness and pattern design. This traditional technique gives jewelry a unique artistic charm by bending and welding thin metal wires into a variety of fine patterns. Filching can not only show complex geometric figures, but also depict lifelike images of animals and plants, so that each work is full of personality and vitality. Fililling plays an important role in enriching the jewelry layers and improving the visual effect. By filling different colors of wire or gems in the gap of the pinching pattern, the filling process can create a more three-dimensional and rich visual effect, making the jewelry more bright and dazzling.

The weaving technique shows diversity by creating strong and flexible structures by weaving wire threads into various patterns and shapes. This technique is not only suitable for making necklaces and bracelets, but also for making complex decorations and practical items. The flexibility and diversity of weaving techniques make it an integral part of jewelry design. The stacking technique is indispensable in creating three-dimensional modeling. By stacking and welding metal pieces or wires together, the stacking technique can create three-dimensional jewelry. This technique is particularly suitable for the expression of the relief effect of the patterns, such as flowers, animals, etc., so that the jewelry has a strong visual impact and artistic expression. The difficulty of welding skills can not be underestimated, it requires the craftsmen to have extremely high skills and patience. By precisely controlling the welding point and the welding temperature, the

welding technique can perfectly combine the various metal parts together to form a solid and beautiful whole. Welding not only ensures the structural stability of the jewelry, but also cleverly hides the seams, making the jewelry look more delicate and complete. Mosaic skills significantly enhance the value of jewelry. By accurately setting stones or other ornaments on a metal base, the technique can make jewelry shine even more. The degree of inlay technology directly affects the beauty and value of jewelry, so the craftsmen must have superb skills and a deep understanding of the characteristics of gems to complete a perfect inlay.

In the article "The Integration and Innovation of the fine metal workman's technique and Modern Jewelry Design", the fine metal workman's technique is exquisite, delicate and gorgeous, which is praised by people. In the era of pursuing the release of personality and the background of contemporary art, modern jewelry no longer follows the previous tradition of precious and complicated jewelry as beauty, but integrates the modern pure, concise and three-dimensional design style, pays attention to the combination of a variety of materials, and pursues the aesthetic height of modern urbanites. However, modern jewelry design cannot leave the bearing capacity of history. Although it is different from the past, it still needs to inherit and carry forward the excellent tradition. Combined with the traditional handicraft in the face of modern jewelry design presented various problems. By studying the characteristics of fine metal workman's technique and the style of modern jewelry design, this paper tries the integration of the two, analyzes the problems, and seeks for some new design means^[8].

3.2 Artistic style

When discussing the style of flower silk jewelry in Ming Dynasty, we have to mention its unique "fiber" and "transparent" characteristics. These characteristics are not only reflected in the production process of jewelry, but also in the pattern design, color collocation and other artistic style has been vividly displayed. The fine metal workman's technique of the Ming Dynasty gives the jewelry a light and delicate aesthetic feeling with its fine lines and distinct three-dimensional feeling. In terms of pattern design, Ming Dynasty silk jewelry often uses elements such as auspicious animals and plants, myths and other elements, through exquisite design and clever composition, showing a traditional and fashionable style. In terms of color collocation, the Ming Dynasty craftsmen were good at using contrasting colors, such as red and green, blue and yellow, which made the jewelry more visually striking, and also reflected the aesthetic trend of the society at that time.

The Qing Dynasty flower silk jewelry was characterized by "fine" and "fine", and its artistic style was particularly prominent in the realistic modeling and dense decoration. On the basis of inheriting the tradition of the Ming Dynasty, the fine metal workman's technique of the Qing Dynasty was further developed and perfected, and reached an unprecedented degree of refinement. In terms of realistic modeling, Qing Dynasty silk jewelry is often based on vivid animal and plant images, and the forms in nature are perfectly reproduced on the jewelry through exquisite technology. The dense pattern is another major feature of the flower silk jewelry in the Qing Dynasty. The craftsmen carefully carved complex patterns and patterns on the surface of the jewelry. These patterns are often rich in layers and exquisite in details, showing a gorgeous and complicated aesthetic feeling. The artistic style of the Qing Dynasty silk jewelry not only reflected the luxury and dignity of the royal family, but also reflects the prosperity and diversity of the social culture at that time.

In his paper "Jewelry Style Analysis of the Jiajing and Wanli Period of the Ming Dynasty" published in 2023, Huang Haodong proposed that during the Jiajing and Wanli years of the Ming Dynasty, the upper class led a trend of competing for luxury, which led to the formation of the design style of inlaid jewelry. During this period, the inlay of a large number of gems significantly changed the style of jewelry in the middle and late Ming Dynasty, forming a fashion trend of surplus. This paper makes an in-depth analysis of the jewelry style of this period from three dimensions of material, color matching and decoration, discusses the large purchase of gems and full dense inlay technology, analyzes the color matching and the secular theme and stylized composition of jewelry. Through the analysis and study of jewelry style in this period, it aims to provide new understanding and reference for the style characteristics of jewelry in Ming Dynasty^[8]. This study provides new understanding and reference for the style characteristics of jewels in Ming Dynasty, explains the profound influence of luxury consumption in the upper level of society at that time on the design style of jewels, and the remarkable embodiment of this style in jewelry in the middle and late Ming Dynasty.

From the analysis of modeling design, the silk jewelry of Ming and Qing dynasties draws the inspiration of nature, such as flowers, leaves, animals and other images. Its shape is lifelike, showing the love of life and the awe of nature. In design, silk jewelry often uses the composition skills of symmetry and hierarchy to create a harmonious aesthetic feeling. For example, earrings and necklaces are often designed to show a symmetrical structure, which improves the visual effect when worn. From the perspective of view, the surface of silk jewelry is usually inlaid with delicate silk, forming a variety of complex and exquisite patterns. These patterns combine geometric elements such as spiral and wavy shapes, showing both beauty and change. The traditional filament inlay technology makes the pattern present various visual effects under

the irradiation of different light, thus enhancing the unique charm and attraction of jewelry. From the perspective of color application, the flower silk jewelry in the Ming and Qing Dynasties was mostly made of gold, silver, copper and other metal materials, and created rich color layers through different oxidation and coating technologies. In colour collocation respect, stylist people can consider the harmony of whole normally, clever use contrast color and complementary color, make jewelry more attractive.

3.3 Cultural connotation and social function

Fine metal workman's technique is a protection project of China's intangible cultural heritage and an important part of Chinese traditional craft. It is widely used in jewelry and traditional decorative artworks, but it is rarely involved in modern product design at present. In 2023 written by Peng Xingxing, Zheng Jing the Chinese traditional filament process in the innovative application of modern product design, the article based on the traditional filament process in the innovation of modern product design analysis, respectively from the perspective of process technology, functional innovation, application of modeling form and the connotation of cultural value, discusses the Chinese traditional filament process in the new development direction of modern product design and innovative application^[10].

From the perspective of regional schools, including the Chengdu area and the Beijing area where the fine metal workman's technique is concentrated. Chengdu silver filament is an important branch in the north and south filament faction in China, and is the leader in the southwest fine metal workman's technique. The unique regional culture and the cultural history of southwest China contained behind it are worth exploring. Han Lulu wrote the analysis of the present situation and development of Chengdu silver silk process, the article insight into the current situation of Chengdu silver silk process, based on the context of modern design aesthetic direction, relying on the traditional craft of exploring innovation of the future development model, by the point and surface to think behind the whole Chinese traditional arts and crafts and intangible cultural heritage protection and inheritance^[11].

In the article "On the Artistic Transformation of Traditional Silk Technology in the Current" written by Meng Chen, the author emphasizes the ancient Chinese technology, after the precipitation of time, it develops more and shows its unique charm and characteristics. However, this kind of charm and characteristic in the contemporary society but few people deep taste. In view of the complexity of its craft and the tradition of its design, if the traditional flower fine metal workman's technique is intended to be revived in the contemporary society, the artistic transformation has become its only way^[12].

Li Manrui the step in the silk process and modern jewelry design, through the comparative analysis of unearthed examples and historical records, combed the history of the silk process, analysis of their language and process characteristics, summarizes the step shape is divided into two kinds: single jewelry and step crown, step type is divided into three types: plant, animal, quasi. The uniqueness of fine metal workman's technique in the step shake is mainly reflected in the flexibility of the material, the space of the combination of the virtual and the shape, and the grade of wearing. This paper studies the origin and development, modeling research and application examples of step shake and fine metal workman's technique, combines the traditional step shake with fine metal workman's technique and modern jewelry design, and discusses the significance of tradition and inheritance. Compared with the traditional artistic creation environment, modern art is more free in aesthetic, craft and other factors. Jewelry artists pursue the expression of personality, modern jewelry design pays more attention to the expression of ideas, and the design language can better convey the connotation and concept of the soul. Although modern art is developing, tradition is the foundation of development. To inherit silk technology and jewelry jewelry, we need to combine the artistic environment of modern society to carry out innovative development of these traditional arts, so as to integrate the tradition and modernity and continue the inheritance. It discusses the fusion of traditional craft and modern jewelry design. Development, using the pattern of silk process elements, combined with the geometric modelling of modern jewelry design, simple modern design elements and heavy and complicated silk process, design a set of suitable for wearing jewelry series "quiet sea", intuitive visual performance and simple elements is the series of jewelry innovation, in the contemporary aesthetic situation, more in line with the public demand, has available^[13].

Although the application of fine metal workman's technique in modern product design is not extensive, its unique cultural value and artistic charm are gradually being recognized and valued by designers and consumers. With the attention and revival of traditional culture, the application potential of fine metal workman's technique in modern design is huge. Designers began to try to combine traditional fine metal workman's technique with modern design concepts to create products with both traditional charm and in line with modern aesthetics. For example, high-end jewelry brands such as Chow Tai Fook and Lao Fengxiang have begun to launch modern jewelry series integrating silk technology in seizing the market. These works not only retain the delicacy and complexity of traditional silk technology, but also integrate modern and simple design elements, making the products more in line with the aesthetic needs of modern consumers.

Silk inlay technology is a representative technology in Chinese traditional jewelry production. After thousands of years of development and inheritance, on the basis of absorbing the essence of multi-ethnic gold making technology at home and abroad, it is rooted in Chinese traditional culture and combines the traditional Chinese jewelry technology concept to form a unique jewelry style. The application of silk inlay technology in utensils and jewelry has strong cultural characteristics in all dynasties, providing rich inspiration materials for contemporary innovative design. In the process of marketization of contemporary filament inlay technology, design innovation has become the core force driving the market growth. The change of peoples life scene leads to the shift of jewelry design to practical and simple. How to better integrate silk Mosaic technology into contemporary aesthetics and better realize market transformation is a key content discussed in this paper. Traditional technology can only obtain the vitality of sustainable development after the market activation, so it is necessary to better integrate it into the current jewelry design trend through innovative design. Yang Yan wrote in 2021 the innovative application research of silk Mosaic process in the jewelry design of the silk Mosaic process development of targeted research, from the process into the cultural connotation and aesthetic concept, focusing on the contemporary silk Mosaic technology inheritance and innovation status analysis, the application of common silk on the market. The innovative cases of jewelry design are compared and interpreted, and the artistic language of silk inlay technology is interpreted and analyzed. Through market research and research, the innovation trends and trends of silk inlay jewelry design in recent years and the product design concept under market segments are studied and analyzed, and the work process of designers is expounded, from theory to practice, to guide the innovation of silk inlay works^[14].

In order to realize the sustainable development of flower silk inlay, reintegrate traditional crafts into the modern society, regain a place in the market, and receive more attention, it is essential to adopt productive protection measures. Shen Yifei written in 2020 based on symbolic silk Mosaic innovation design research of symbolic concept into the silk inlaid technology inheritance, the application of semiotics theory from the pattern, techniques and shape style of silk Mosaic recognizable symbols, the representative visual language applied to the modern household design, realize the organic combination of traditional technology and daily life. The theoretical research part of the topic mainly includes the following aspects: the construction of the methodology of the symbolic extraction; how to realize the market transformation of the process; and the development path analysis of the symbolic application in the process of production protection. Subject of practical research part verified the feasibility of theoretical research: the filament inlaid modelling law, craft style, pattern mechanism, material color scattered restructuring, the traditional symbol elements into modern creative material, get inspiration from traditional, combined with the contemporary aesthetic orientation, based on the modern way of life design manufacture both have national characteristics and meet the needs of the peoples livelihood of household products. Symbol of the filament inlay. Methodology construction make its inheritance development process more systematic and diversified, not only can ensure the differences between culture is not destroyed, in the fusion with modern aesthetic do seek common ground while putting aside differences, and help to break the barriers to the development of traditional craft, make its application carrier no longer have limitations, to realize a variety of forms of craft culture transmission, finally realize silk inlaid inheritance protection and innovation^[15].

"Research on Large-scale Production of Beijing Contemporary Silk Mosaic Technology" is a case study of a batch of silk inlay ornaments products by the author Tang Ran. The furnishing products were produced by the Beijing Silk Mosaic Factory between the late 1970s and the late 1990s. Large quantity, many styles. Under the premise of not repeated style and theme, a total of 848 pieces. Among them, there are many styles are not the only one, there are the same type of several pieces. After sorting and analysis, it is found that the shape and technology of these products are far from the rich, luxurious, tedious and delicate silk inlaid craft products in the general understanding, reflecting a "daily" "civil" characteristics. This difference makes the authors research leave the paradigm of non-genetic inheritance from recording the process and describing the style characteristics of "masterpieces", and instead discusses the role of the filament inlay technology in a specific era background, and studies the filament inlay technology from the industrial situation and cultural ecology. It includes both the process and products, but also the producers^[16].

In the specific historical environment to understand and understand the specific period of Beijing flower silk inlay technology and its material achievements. Based on the above research perspective, the research idea is to start from the product, and to build the information network around the side when it is produced. Find out the characteristics of The Times of each link, and then restore the production situation and social situation of the product. This paper contains two clues, one is promoted from "material" to its production mode, industrial ecology and cultural ecology, the other is the analysis of the relationship between the production of filament inlay technology and the artistic, technical, productive and social characteristics of its products. Research shows that these mass production of silk inlay technology products reflect a theme and interesting "daily picture" of folk customs, the overall specifications of small and medium size, suitable for the daily living environment of the public. Corresponding to these surface features is the simplification of the product manufacturing process and the "popularization" of material selection. These cost control measures at the product level are for the industry goal of "export and production growth". Under such a social background, the state organized centralized production in the way of "government", and tilted resources. This large-scale production mode confirmed the

recovery, promotion and development of the silk inlay technology at that time it has actually played a positive role. Let us see the "special technology" such as flower silk inlay, also existed as the product form of large-scale production of the factory, showing the "exquisite work" and "rich luxury", different from the usual cognition.

In the process of national modernization, the filament inlay technology has also completed its own modernization transformation, and has become a pathfinding stone for a country to participate in the world economic tide and the modernization process. However, it should also be seen that under the label of "earning foreign exchange" and "seeking benefits", the industrial goal of "scale" and "expansion" is carried out with the power of the state, so that all the attention from the state, society, enterprises, education and research can focus on "production" and ignore the "cultural" value. Production and social replace art to become the most important dominant factor of this batch of silk products. The defect in the artistic creativity and the development of craft culture in the industrial beauty industry makes the art form of silk inlay technology in Beijing confined to the tradition and has few breakthroughs.

In addition, the filament craft is also of great significance in the cultural connotation and social function. It is not only a skill, but also a cultural inheritance and expression. The jewelry and ornaments made by the fine metal workman's technique can convey the profound heritage and aesthetic taste of Chinese traditional culture. In terms of social function, the revival of fine metal workman's technique helps to promote the development of traditional handicraft industry, provide employment opportunities for craftsmen, and promote the prosperity of local economy. At the same time, it also helps to enhance the public's awareness of the protection of intangible cultural heritage, and enhance the national cultural confidence.

In the future, with the progress of technology and the innovation of design concept, the fine metal workman's technique is expected to be applied and promoted in more fields. For example, in home decoration, fashion accessories, gift design and other aspects, fine metal workman's technique is likely to become a new design language. At the same time, with the strengthening of education and training, more young people will have the opportunity to learn and master this traditional skill, and inject new vitality into the inheritance and development of flower silk technology.

This paper discusses the influence of fine metal workman's technique on the jewelry art and the making art of gold and silver ware in the Ming and Qing dynasties, and how it is inherited and carried forward in the long history. In the Ming and Qing Dynasties, the flower fine metal workman's technique reached an unprecedented height, and its fine craft and unique aesthetic value had a profound influence on the jewelry art of later generations. This influence is not only reflected in the technical level, but also in the cultural significance and aesthetic concept it carries, which provides valuable reference and inspiration for the later gold and silver ware production techniques.

Analyze the inheritance status of fine metal workman's technique in contemporary times, as well as its application and development in modern jewelry design, process innovation and other aspects. With the development of The Times, the fine metal workman's technique is facing the challenge of integrating traditional skills and modern aesthetics. At present, we see that more and more designers and craftsmen begin to pay attention to and try to combine the traditional fine metal workman's technique with the modern jewelry design, to create both the traditional charm and in line with the modern aesthetic works. At the same time, technological innovation is also constantly promoting the development of fine metal workman's technique, so that it maintains the essence of the traditional process while being more diversified and personalized, injecting new vitality into this ancient technology.

4 Conclusions and Outlook

The silk jewelry technology in the Ming and Qing Dynasties, as a bright pearl in the ancient Chinese production techniques of gold and silver ware, not only marked the peak of the development of ancient handicrafts, but also reached an amazing height in the craftsmanship. The craftsmen of this period, with the exquisite skills and endless creativity passed down from generation to generation, woven metal wire into exquisite jewelry, which not only reflect the superb skills of ancient craftsmen, but also contain profound cultural heritage and unique aesthetic pursuit.

In the technical level, the silk jewelry process of the Ming and Qing Dynasties showed a very high precision and complexity. The craftsmen use various techniques such as pinching, filling, weaving, saving and welding to skillfully weave, inlay and weld the gold and silver strands together, forming a variety of complicated and exquisite patterns and shapes. These patterns often have a profound meaning, both auspicious traditional patterns, but also vivid images of animal and plant images, each work is like a beautiful micro-carved picture scroll, let people praise.

In terms of artistic style, the flower silk jewelry in the Ming and Qing Dynasties is even more unique, with strong characteristics of The Times and national style. These jewelry works are not only beautiful in shape, smooth in lines, but also rich in color. Through the precious materials such as inlaid gems and pearls, they add a bit of magnificence and nobility. They not only reflect the pursuit of beauty in the ancient society, but also reflect the aesthetic concept and aesthetic level of the society at that time.

Studying these jewelry techniques, we can not only appreciate the exquisite skills and infinite creativity of the ancient

craftsmen, but also deeply feel the charm of the ancient art. Each piece of silk jewelry is the crystallization of the craftsmans painstaking efforts. They not only carry the wisdom and sweat of the craftsman, but also convey a kind of emotion and aesthetic experience across time and space. By appreciating and studying these jewelry works, we can have a deeper understanding of the social history and cultural background of the Ming and Qing Dynasties, and feel the unique charm and far-reaching influence of ancient culture.

In addition, the silk jewelry technology in the Ming and Qing Dynasties also has a very high cultural value and research value. They are not only an important part of Chinese traditional handicrafts, but also the treasures in the treasure house of Chinese national culture. Through the research and excavation of these jewelry crafts, we can better inherit and carry forward the excellent traditional Chinese culture, and promote the innovation and development of Chinese traditional handicrafts. At the same time, these jewelry works also provide valuable inspiration and reference for modern jewelry design, so that modern designers can absorb the essence of traditional culture in their creation, and create jewelry works with unique style and characteristics of The Times. The gold flower silk jewelry in the Ming and Qing dynasties, not only has a very high artistic value, but also contains a rich cultural connotation. These jewelry are often endowed with the meaning of auspiciousness and wealth, and become an important carrier for court nobles and people to express good wishes and pray for good wishes. At the same time, these jewelry also reflected the aesthetic tendency and fashion trend of the society at that time, and became an important material material for the study of the social culture of the Ming and Qing Dynasties.

The study of flower silk jewelry has had a profound influence on the later generations. On the one hand, they provide valuable technical inheritance and artistic reference for the fine metal workman's technique of later generations. On the basis of learning and drawing lessons from the fine metal workman's technique of the Ming and Qing Dynasties, many craftsmen of later generations have constantly innovated and developed, forming new artistic styles and technical characteristics. On the other hand, the gold flower silk jewelry in the Ming and Qing Dynasties also became an important part of the traditional Chinese culture, which had a positive impact on the cultural inheritance and development of the later generations. They not only show the profound cultural heritage and aesthetic pursuit of the Chinese nation, but also provide a wealth of inspiration and materials for the design and production of jewelry in later generations.

It discusses the application of silk technology in modern jewelry design. This study not only helps to inherit and innovate the national intangible cultural heritage — silk process, promote its integration with modern design and stimulate new vitality, but also can enhance the artistic value of jewelry works and meet the increasingly diversified aesthetic needs of contemporary consumers. In addition, the application of fine metal workman's technique in jewelry design has added higher added value and market competitiveness to the jewelry industry, promoted the innovative development of the industry, and enhanced the competitiveness of Chinas jewelry in the international market.

There are many values to study the application of fine metal workman's technique in contemporary jewelry design. From the perspective of cultural value, this research can help to promote Chinese culture and enhance national pride and cultural confidence. From the perspective of economic value, the flower fine metal workman's technique jewelry works have a high market value because of their exquisite craftsmanship and unique cultural connotation, which provides the impetus for the economic development of the jewelry industry. From the perspective of social value, research is helpful to cultivate more inheritors of fine metal workman's technique and promote the inheritance and development of skills. From the perspective of aesthetic value, the flower fine metal workman's technique jewelry works show the wisdom and talent of the craftsmen, improve peoples aesthetic level, and enrich peoples cultural life.

With the development of modern science and technology and the improvement of peoples aesthetic concept, as a treasure of Chinese traditional handicraft, its future development trend will present the following characteristics:

Silk technology will be combined with modern design concepts to create more works in line with modern aesthetics. Designers will pay more attention to traditional element and modern style photograph confluence, make flower silk handicraft retains traditional lasting appeal already, do not break fashionable feeling again.

With the popularization of digital technology, the production process of filament process will be more refined and efficient. Modern technologies such as 3D printing and laser engraving will be introduced into the filament process to help artisans more accurately implement creative ideas on design drawings while improving production efficiency.

The inheritance and education of fine metal workman's technique will be strengthened. Through the establishment of more arts and crafts schools and workshops, cultivate a new generation of fine metal workman's techniquesmen, and use the network platform for online teaching and display, so that more people can understand and learn this skill.

The marketing and brand building of fine metal workman's technique will be more important. By participating in domestic and foreign handicrafts exhibitions, establishing brand flagship stores, carrying out network marketing and other ways, to improve the popularity and influence of flower silk handicrafts, and expand the domestic and foreign markets.

As one of the traditional Chinese jewelry making techniques, it has a long history, especially in the Ming and Qing Dynasties, which has been greatly developed and applied. Its exquisite skills and rich cultural connotation not only

occupy an important position in the jewelry design at that time, but also provide rich inspiration and innovation possibilities for the contemporary jewelry design. The influence of culture and art on modern jewelry design is reflected in many aspects, specifically as follows:

The integration of traditional cultural elements:

In modern jewelry design, the application of traditional cultural elements has gradually become a trend. Through the study of the silk jewelry in the Ming and Qing dynasties, the designers absorbed the design concepts and skills, and created modern works with cultural depth. With its exquisite craftsmanship and unique aesthetic characteristics, the fine metal workman's technique has become an important reference in modern jewelry design. Designers can incorporate traditional cultural elements into modern design in the following ways:

Form and shape:

The flower silk jewelry in the Ming and Qing Dynasties is mostly inspired by the form of nature. Designers can learn from this form and integrate elements such as flowers and birds into modern jewelry to form a unique modeling style.

Decoration techniques:

The meticulous and complex process of silk give modern jewelry designers inspiration in decorative techniques. Through the use of flower silk, modern jewelry design can present more rich levels and details, and enhance the artistic value of the works.

The combination of art and practicality:

Modern jewelry design pays more and more attention to the combination of artistry and practicality. Traditional fine metal workman's technique emphasizes artistry, but it also gives consideration to the comfort and practicality of wear. On this basis, modern designers can achieve a balance between the two through the following ways: while ensuring the artistic beauty, they should pay attention to the wearing comfort of jewelry. Designers can refer to the structural design in the silk process to ensure that the jewelry will not bring discomfort to the user when wearing. Multifunctionality: Modern jewelry design can learn from traditional crafts and explore the versatility of jewelry, such as removable, adjustable and other characteristics, to enhance the practical value of jewelry.

The Influence of installation art:

In recent years, installation art has had a significant influence on modern jewelry design. Installation art emphasizes the combination of space, material and form, from which modern jewelry designers can draw inspiration to create more expressive works. It is embodied in the following aspects: artistic expression: By integrating the concept of installation art into jewelry design, designers can explore new materials and structures, making the work more visually striking. Interactivity: Modern jewelry design can draw lessons from the concept of interaction in installation art, and design jewelry works that can interact with the wearer, so as to enhance the interest and participation of wearing.

Cultural identity and personality expression:

The diversity of modern society and culture makes consumers pay more attention to cultural identity and personality expression when choosing jewelry. As a representative of traditional culture, fine metal workman's technique can play a positive role in this process: cultural identity: the younger generation of consumers increasingly have a sense of identity with traditional culture, and they are more willing to choose jewelry with cultural background. Designers can meet this market demand through the inheritance and innovation of flower silk technology. Personalized customization: modern consumers pursue uniqueness, and customized jewelry is gradually becoming popular. With the help of the flexibility of the flower silk process, designers can provide consumers with personalized and customized services, so that each piece of jewelry can reflect the wearers personality and aesthetic appreciation.

Cross-cultural communication and influence:

With the acceleration of globalization, modern jewelry design has also been influenced by international culture. In their creation, designers can integrate elements from different cultures to create works with an international vision. As a traditional Chinese jewelry technology, silk technology can participate in this process in the following ways: Cultural integration: Designers can combine silk technology with international jewelry design concepts to create modern jewelry with Chinese characteristics to meet the needs of different markets. Show Chinese culture: In the international jewelry market, fine metal workman's technique can be used as an important carrier to display Chinese traditional culture. Through modern design language, more people can understand and love this traditional art.

Looking into the future, the application of fine metal workman's technique in modern jewelry design will be more widely used. With the development of science and technology, designers can use new materials and new technologies to further enhance the expression of fine metal workman's technique. For example, the application of 3D printing technology can make the design of filament process more complex and delicate, and broaden the possibility of jewelry design. At the same time, as consumers pay more attention to environmental protection and sustainable development, designers will also pay more attention to environmental protection and sustainability in the material selection and production process.

Strengthen the academic research on the history and cultural value of flower fine metal workman's technique, and

dig deeply into its expression form and cultural connotation in different historical periods. At the same time, we should pay attention to the application and innovation of fine metal workman's technique in modern society, and explore its potential in fashion accessories, home decoration, gift market and other fields. To study the combination of fine metal workman's technique and modern technology, the dissemination and acceptance of fine metal workman's technique in different cultural backgrounds, the sustainable development strategy of fine metal workman's technique, and the innovative application of fine metal workman's technique in modern design, etc. Through these studies, theoretical support and practical guidance can be provided for the inheritance and development of fine metal workman's technique.

About the Author

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