

Design and Production of Woven Rope Embroidery and Patchwork

Decorative Wall Hangings

Shuzhen Chen, Li Zhang, Xiaoli Ren, Ruoyao Xu, Lin Wang
Anhui Vocational and Technical College, Hefei 230011, China.

Fund Project: This paper is the 2023 University Research and Innovation Team of Anhui Vocational And Technical College in 2023: Project No.: (2023xjkytd5) Project Name: Intelligent Clothing Design and Production Research and Innovation Team.

Abstract: Based on the traditional Chinese patchwork craft "Eight-Pointed Lotus Flower" and the Western patchwork craft "Coin Pattern," a patchwork decorative wall hanging is designed and produced. The overall color scheme adopts traditional Chinese colors of bright red and deep blue, combined with blue printed fabric, and embellished with the craft of woven rope embroidery to create three-dimensional traditional Chinese auspicious patterns "Hui Zi Wen" and "Fu Zi Wen." The overall artwork seamlessly integrates elements from both Chinese and Western designs, achieving a harmonious and unified visual effect, showcasing the charm of Chinese traditional culture, and also suitable for modern daily use.

Keywords: Patchwork; Eight-Pointed Lotus Flower; Coin Pattern; Woven Rope Embroidery

Patchwork is an ancient handicraft with a history of several thousand years, originating from ancient Egypt and China. People used this craft to repurpose fabric scraps and old clothes, cutting them into different shapes, and sewing them together to create beautiful patterns, ultimately making practical household items such as bed sheets and blankets. Initially, patchwork was for practical purposes, but as time passed and with the development of society, people infused patchwork with more artistic design concepts and various crafting techniques, gradually giving rise to a new category known as "artistic patchwork." Many designers apply artistic patchwork in the field of interior soft furnishings, effectively enhancing the aesthetic and artistic aspects of interior spaces, providing people with a fresh visual experience [1].

Taking an example of a woven rope embroidery patchwork decorative wall hanging, the production process is described in detail. Drawing inspiration from the traditional Chinese patchwork craft "Eight-Pointed Lotus Flower" and the Western patchwork craft "Coin Pattern," a patchwork decorative wall hanging is designed and produced. The overall color scheme adopts traditional Chinese colors of bright red and deep blue, combined with blue printed fabric, and embellished with the craft of woven rope embroidery to create three-dimensional traditional Chinese auspicious patterns "Hui Zi Wen" and "Fu Zi Wen." The overall artwork seamlessly integrates elements from both Chinese and Western designs, achieving a harmonious and unified visual effect, showcasing the charm of Chinese traditional culture, and also suitable for modern daily use.

1. Patchwork Decorative Wall Hanging Overview

1.1 Finished Size

The finished size of the wall hanging is 178cm x 88cm. The layout diagram and the visual representation of the finished product are shown in Figure 1 and Figure 2, respectively.

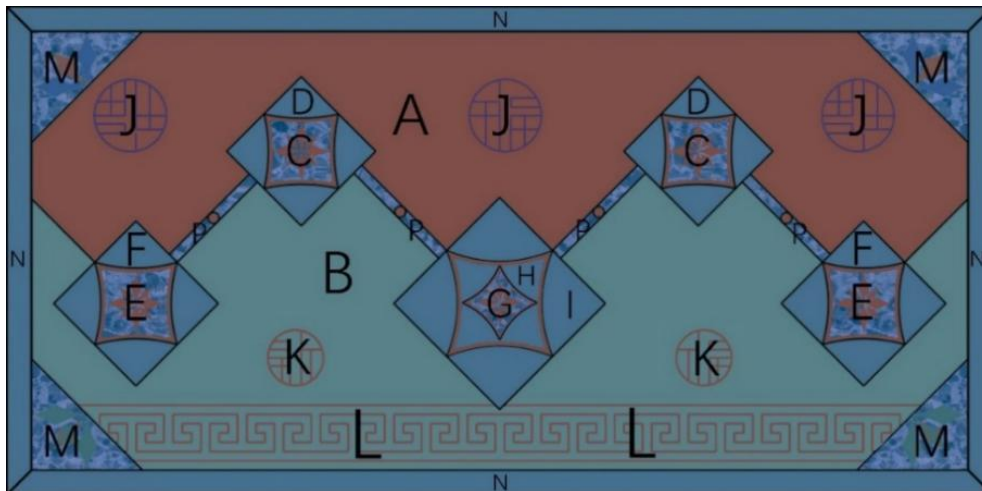


Figure 1: Configuration diagram



Figure 2: Finished picture

1.2 Required Materials

The design and production of the patchwork decorative wall hanging can be divided into three main sections: the octagonal lotus flower, the coin pattern, and the combination blocks. The materials needed mainly include blue and red printed cotton fabrics, blue and red printed fabrics, batting, fusible interfacing, cotton threads, etc.

1.2.1 Octagonal Lotus Flower Blocks

For the octagonal lotus flower blocks (C, E, G blocks), blue printed cotton fabric, red printed cotton fabric, and black fusible interfacing are mainly used. The specific dimensions are as follows: blue printed cotton fabric - length 2 meters, width 1.5 meters; red printed cotton fabric - length 2.5 meters, width 1.5 meters; black fusible

interfacing - length 5 meters, width 1 meter.

1.2.2 Coin Pattern Blocks

For the coin pattern blocks (D, F, H blocks), blue printed cotton fabric, red printed cotton fabric, and black fusible interfacing are mainly used. The specific dimensions are as follows: blue printed cotton fabric - length 3.5 meters, width 1.5 meters; red printed cotton fabric - length 3 meters, width 1.5 meters; black fusible interfacing - length 8 meters, width 1 meter.

1.2.3 Combination Blocks

The combination block (I block) is further divided into six modules: main flower (I block), bottom layer (A, B blocks), five combined flowers (EF, CD, GHI blocks), connecting buckle (P block), "福" character cord (K, J blocks), and edging for the bottom of the wall hanging (M, N blocks). The materials needed for the main flower (I block) and the five combined flowers (EF, CD, GHI blocks) have already been mentioned in the octagonal lotus flower and coin pattern sections.

For the bottom layer (A, B blocks) patchwork, mainly red printed cotton fabric, blue printed cotton fabric, and black fusible interfacing are used. Prepare red printed cotton fabric - length 1.8 meters, width 0.6 meters; blue printed cotton fabric - length 1.8 meters, width 0.7 meters; black fusible interfacing - length 2 meters, width 1.1 meters.

For the connecting buckle (P block), mainly blue printed cotton fabric and red printed cotton fabric are used. The blue printed cotton fabric is 0.5 meters long, 1 meter wide; the red printed cotton fabric is 1 meter long, 1 meter wide.

For the "福" character cord (K, J blocks), blue 60S/2 polyester sewing thread and red 60S/2 polyester sewing thread are mainly used, one spool each.

For the edging of the bottom of the wall hanging (M, N blocks), mainly blue printed cotton fabric, blue printed cotton fabric, and fusible interfacing are used. The specific dimensions are as follows: blue printed cotton fabric - length 2 meters, width 1.5 meters; blue printed cotton fabric - length 6 meters, width 1.5 meters; fusible interfacing - length 2 meters, width 1.5 meters.

2. Making the Octagonal Lotus Flower Block

The lotus flower is a common theme in traditional Chinese patterns, and it is widely used in both religious beliefs and artistic expressions in daily life [2]. The octagonal lotus flower is a representation of the lotus flower pattern in the field of patchwork and is one of the classic styles in traditional Chinese patchwork. For this production, two types of printed fabrics in blue, white, and red colors are used, combined through layering, stitching, and inlaying techniques to form a lotus flower pattern with eight petals. The specific steps of the process are as follows:

Step 1: Cut a square piece of red fabric as the base cloth with a side length of 20cm. Cut four rectangular pieces of blue printed fabric with a length of 20cm and width of 11cm, and four rectangular pieces of red printed fabric with a length of 20cm and width of 11cm. Prepare the cut pieces for later use.

Step 2: Take one piece of blue printed fabric and one piece of red printed fabric, place them face to face, and sew them together with a straight seam of 1cm in width, making four sets of stitched pieces for later use.

Step 3: Lay flat and iron the four sets of stitched fabric to smooth them out. After ironing, fold them in half, making sure not to reverse the fold, and fold them along the seam line. Fold the long rectangular red fabric to the inside, then fold the triangular blue printed fabric to the outside. Iron them flat and sew four equally sized triangular blocks for later use, as shown in Figure 3.



Figure 3 Drawing of Octagonal Lotus Flower Block

Step 4: Lay the prepared red base fabric flat and fold the square base cloth along the diagonal line to find the center point. Align the apex of the triangular folded fabric with the center point and place it on the base. Arrange the four petals from Figure 3 on top of the base and sew around the edges with a 0.3cm seam allowance to secure them. Use a hand needle to sew the four apexes together, making sure to hide the thread ends underneath the blue printed fabric without exposing them.

Step 5: Fold the fixed four triangular folded fabrics along the crease lines to form a "V" shape. Along each "V" shape, measure two equidistant points outward from the center point of the base fabric and mark them as points A and B. Use a hand needle to sew each AB point by stitching around the thread 3 times, forming plump and full eight petals. Conceal the thread ends inside the petals, avoiding any exposure. Repeat the same method to create five octagonal lotus flowers of different sizes for later use.

3. Making the "Coin Pattern" Block

The "Coin Pattern" block is a type of origami-style patchwork that combines the stretching characteristics of the fabric's diagonal grain. The specific steps are as follows:

Step 1: Cut a piece of red base fabric into a square with a side length of 20cm. Cut four square pieces of blue printed fabric with a side length of 11cm. Fold one square piece of red printed fabric in half and press it flat. Take the four square pieces of blue fabric, pair them up with each other in reverse, and stack them together with a total length of 20cm, overlapping 1cm of each fabric. Prepare all the pieces and set them aside for later use.

Step 2: Take the two stacked blue fabric pieces and the folded red printed fabric, and arrange them neatly as shown in Figure 4. Pay attention to the alignment of the raw edges of the folded red fabric and the right sides of the blue fabric. Follow the same stacking method as before, with the red printed fabric sandwiched in the middle, aligning the raw edges. This forms Figure 4.



Figure 4 Sewing and placement diagram of copper coin grain

Step 3: Take the fabric arranged in Figure 4 and stitch a 1cm-long straight line on each side in the width direction. Press the stitched fabric flat.

Step 4: Press the stitched seams flat so that the raw edges of the blue printed fabric and the red printed fabric form straight lines. Set it aside after pressing.

Step 5: Open the pressed fabric and fold the red fabric in the center. Lay two layers of red printed fabric and two layers of blue printed fabric on top, ensuring that the red corners are even. Stitch 1cm on the four layers at the opening.

Step 6: Open the stitched fabric from Step 5 to form a cross shape. Press the seams flat and flip it to the right side, presenting a centered red square pattern with the red fabric hanging over the edges. Set it aside.

Step 7: Place the completed "Eight Petal Lotus Flower" on the red fabric from Step 6 with the red corners aligned. Trim the four sides into a crescent shape, indenting 1cm inward from the middle to form the crescent shape. After trimming all four sides, securely stitch around with a 0.1cm detail stitch.

Step 8: Fold and wrap the "Eight Petal Lotus Flower" along the four crescent-shaped sides of the red fabric. Stitch 0.1cm along the four edges, ensuring a full and neat stitching. Now, one individual "Coin Pattern" and one "Eight Petal Lotus Flower" combination are completed and ready for use. Use the same method to create two large and two small combination patterns, paying attention to the dimensions of each fabric piece.

4. Make a combination block

4.1 Making the Main Flower Block

Prepare a completed "Coin Pattern" block (H block) and "Eight Petal Lotus Flower" block (G block) combination pattern. Use the steps for creating the "Coin Pattern" and replace the blue printed fabric with plain blue fabric and the red printed fabric with red printed and dyed fabric. Cut the required size of the fabric to create the pattern shown in Figure 17. Based on the prepared "Coin Pattern" (H block) and "Eight Petal Lotus Flower" (G block) combination pattern, place it in the center of Figure 17. Using the same method, create the second "Coin Pattern" border to complete the main flower block (I block) for later use.

4.2 Making the Base Fabric

The base fabric (A and B blocks) consists of two types of fabric. First, prepare the

red printed and dyed fabric for A block (length 180cm, width 60cm) and the blue printed and dyed fabric for B block (length 180cm, width 70cm). Lay them out in a 3:6 ratio, as shown in Figure 5, and trim them accordingly. Leave a 1cm seam allowance during the trimming process. Align the cut red and blue fabrics with their right sides facing each other and stitch them together with a 1cm seam allowance. After stitching, trim the corners at 90° angles and press the seams flat.

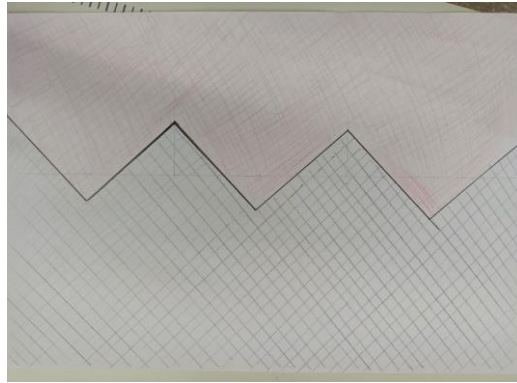


Figure 5

4.3 Sewing the Combination Flowers to the Base Fabric

Place the five completed combination flowers (EF, CD, GHI blocks) onto the base fabric as shown in Figure 6. Use chalk to draw a circle along the edge of the fabric, creating five smaller squares with a 2cm seam allowance on each side. Cut open the fabric along the edges of the five smaller squares to form square openings. Insert each of the five combination flowers into their corresponding square openings. Align them properly and sew them in place with a 1cm seam allowance, ensuring that the corners form right angles. After trimming the seams, press them flat.

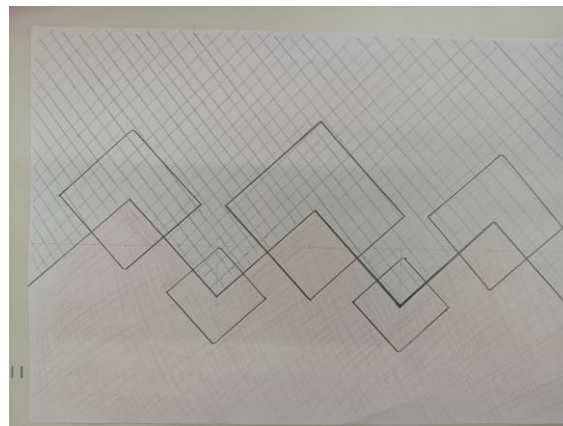


Figure 6

4.4 Making the Connecting Buckle

The connecting buckle (P block) is a traditional Chinese clothing accessory commonly known as the "Yi Zi Kou", which resembles the Chinese character "一". To make the connecting buckle, cut four strips of red printed fabric at a 45-degree angle, each measuring 2.8cm in width and 50cm in length. Fold the sides of each strip inward twice and sew them with a hooked needle to create a sturdy line. Use these sewn strips to form the connecting buckle. To maintain the overall integrity of the

artwork, wrap each connecting buckle with blue printed fabric, cut a 5cm wide and 80cm long strip of blue printed fabric, fold it in half and sew it together with a 1cm seam allowance. Then, flip it over to the right side and trim it into eight equal segments. Use two segments to wrap each end of the connecting buckle, and insert the seam head of one segment into the other end using tweezers. Sew it securely with an invisible stitch, completing four sets of wrapped buckles. Sew these four sets of wrapped buckles at the joint between the red and blue fabrics, positioning them at the center where the three pieces of fabric intersect. Secure the entire connecting buckle with an invisible stitch, resulting in the final product shown in Figure 2.

4.5 Making the "Hui Zi Wen" and "Fu Zi Wen" Blocks

The "Hui Zi Wen" is a traditional Chinese decorative pattern, named after its resemblance to the Chinese character "回". It evolved from the "Yun Lei Wen", one of the oldest decorative patterns in China, characterized by continuous spiral lines forming either circular or square patterns. The circular patterns are called "Yun Wen," while the square patterns are called "Lei Wen." [3]

For the "Fu Zi Wen," it is a type of traditional auspicious pattern, representing the materialization of traditional Chinese culture and an artistic form depicting the nation's history.[4]

The artwork is decorated with the "Hui Zi Wen" pattern at the bottom and the circular "Fu Zi Wen" pattern at the top. For their creation, the "Pan Shen Xiu" technique is used, which is a form of three-dimensional embroidery. Embroidery is an ancient craft with a history of over 4,000 years, and it has evolved into various styles. Three-dimensional embroidery is one such technique, emphasizing the aesthetics rather than the practicality of the embroidery.[5]

To create the "Pan Shen Xiu," the first step is to twist the printed cotton threads into ropes. The process involves combining four strands of thread into one and then twisting them together. Two people hold the ends of the four strands about 5 meters apart, with one person securing one end while the other person twists the other end in the original winding direction. After twisting for a while to form a strong rope, the middle point of the rope is pinched, and then the two ends are brought together, pulled along with the middle point, and twisted in the opposite direction to eliminate the tension in the rope. Finally, one end is folded, and the other end is tied with a knot to complete the creation of the rope. Use the same method to make red and blue twisted ropes for later use.

In the large artwork, mark the positions and sizes of the "Hui Zi Wen" and "Fu Zi Wen" patterns on the fabric using a heat erasable pen. Using the prepared twisted ropes, sew along the marked lines to create the complete patterns. Use a fire to burn off any excess thread ends at the joints, making sure to choose matching threads for a cohesive look. Repeat the same process to create the "Hui Zi Wen" pattern, as shown in Figure 2.

4.6 Making the Bottom, Corners, and Edges

For the corners of the wall hanging, use hollowed-out half eight-petal flowers as decorations. To match the right angles, each corner lotus flower is only made as a half. The process of making the eight-petal flowers has been explained earlier and

will not be repeated here. The wall hanging consists of three layers: the middle layer uses acrylic filling, and the bottom layer is made of a single piece of blue printed fabric that can fully wrap the artwork. Lay the three layers flat and secure them with a hand-sewing needle first. Then, use the blue printed fabric to cut 45-degree diagonal strips, each measuring 17cm in width and the same length as the circumference of the artwork. Sew the four layers together with a 1cm-wide seam allowance, leaving the seams at the corners. For the corners, create triangular-shaped binding with a 1cm-wide seam allowance, fold them along the seams and press them flat. Turn them to the right side, tuck them 5cm inside the artwork, and sew them with a 0.1cm visible stitch. Press the entire artwork flat. At this point, the production is complete.

5. Conclusion:

Patchwork is an ancient folk handicraft that has appeared in both China and the West. Different artistic styles have been developed based on the cultural differences of various countries. The wall hanging combines the traditional Chinese "Eight-Petal Lotus Flower" with the Western traditional "Coin Pattern" in an innovative design. It also incorporates three-dimensional embroidery and connecting buckles. Through the fusion of craftsmanship, the use of updated materials, and innovative design themes, traditional crafts are endowed with a new artistic style and cultural connotations.

With the development of the times, energy conservation, environmental protection, and sustainable development have become hot topics. In the selection of raw materials for patchwork, it may be considered to use pure natural fabrics and plant dyeing techniques in the future. Combining the inherent love and cherish concept in patchwork, this will have a certain promotional significance in spreading the concept of sustainable design and promoting the cultural connotations of green fashion.

References:

- [1] Chen, Y. Y. (2021). Application of Patchwork Art in Modern Interior Textile Design. *Chemical Fiber & Textile Technology*, 50(11), 134-136.
- [2] Peng, Q. Y., & Ding, R. (2013). A Brief Analysis of the Enlightenment of Traditional Lotus Patterns on Contemporary Localization Design. *Journal of Hefei University of Technology (Social Sciences Edition)*, 27(05), 100-103.
- [3] Chen, R. L. (2006). *A Brief History of Chinese Ancient Graphical Art*. Tsinghua University Press.
- [4] Wang, W. H. (2012). Analysis of the Application of Auspicious Decorative Patterns in Traditional Chinese Architecture and Its Confucian Cultural Connotations. *Folklore Research*, (3), 137-141.
- [5] Liu, Y., & Sun, T. (2022). Innovative Application of Traditional Three-Dimensional Embroidery Techniques in Clothing Design. *Woolen Technology*, 50(8), 40-47.