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VISUAL MOVEMENT PRODUCED
BY BOBBIN LACE
TECHNIQUES

BY
MARIAN HALEY BEIL

CANDIDATE FOR MASTER OF FINE ARTS DEGREE

SCHOOL FOR AMERICAN CRAFTSMEN
COLLEGE OF FINE AND APPLIED ARTS

ROCHESTER INSTITUTE OF TECHNOLOGY
ROCHESTER, NEW YORK

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TO DONALD

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THESIS PROPOSAL

Thesis Proposal for the Masters of Fine Arts Degree

College of Fine and Applied Arts
Rochester Institute of Technology

Title: Visual Movement Produced by Bobbin Lace Techniques

Submitted by: Marian Haley Beil Date: October 4, 1978

Thesis Committee:

Chief Advisor: Donald Bujnowski

Associate Advisors: Max Lenderman (1)

Phillip Bornarth (2)

Departmental Approval: 1. Donald Bujnowski Date: 10/4/78

2. Max L. Lenderman Date: 10/4/78

Approval, Chairman of the Graduate Program:

Fred Meyer

Date: 10/13/78

Final Committee Decision:

Date:

Utilizing the techniques of bobbin lace, I shall explore the qualities of visual movement in fiber media. I shall create a series of forms using a variety of materials and, in some, shall incorporate other textile techniques to enhance the work.

ACKNOWLEDGMENTS

I have enjoyed great personal growth during the past four years as a student at the School for American Craftsmen and I would like to salute the School for offering me an environment which has made this possible.

I have benefited from inspiration from faculty members--most notably Donald Bujnowski who, by example, taught me to think creatively, made me demand more of myself than I thought possible, and provided support, and encouragement when I needed it, Max Lenderman, whose enthusiasm and inventiveness has been a stimulus to my growth, and Phillip Bornarth, who with positive analysis, gave me direction and support in my thesis work.

My time as a student has been enriched by the friendship and creative exchange with the students of the Weaving and Textile Design Department.

My special thanks go to my family--my sons Noah and Gabriel who have a great appreciation for my work and my husband Donald, who has supported my efforts and aspirations unfailingly.

CHAPTER I

HISTORY

Although bobbin lace is said to be the last traditional textile technique to be developed¹ its exact origin is not known. The first known documentation of its existence is in a will published in 1493 in Zurich, Switzerland.² Its evolution may have been from passimenteri, which were narrow braids made of metallic threads used as embellishment for clothing. In the use of bobbins it closely resembles the production techniques of warp weighted weaving which dates to ancient times.³

Regardless of the lack of knowledge of its precise beginning, the technique spread quickly through Europe because of the extensive trading that was conducted at that time. Belgium and Italy quickly perfected bobbin lace to a high degree of craftsmanship as did France and Spain. When bobbin laces were first produced they were made in narrow

¹Brigita Fuhrmann, Bobbin Lace (New York: Watson-Guptill Publications, 1976), p. 9.

²Ernest Lefébure, Embroidery and Lace: Their Manufacture and History from the Remotest Antiquity to the Present Day, trans. and enlarged Alan S. Cole (London: H. Grevel and Co., 1888), p. 261.

³Verla Birrell, The Textile Arts (New York: Harper and Brothers, 1959; Schocken Books, 1974), p. 59.

bands, then made wider, and eventually they were made in separate design elements that were subsequently sewn together.

Bobbin laces became very popular for the trim of garments for both women and men of high social station because of their elegance and soft draping qualities. Lace was used lavishly by royalty, and the production of bobbin laces became a major industry employing thousands of people in various cities throughout Western Europe. Regions developed designs and used fibers which were unique to the areas and as such became a great source of pride and competition.

With the coming of the French Revolution in 1789, production was nearly eliminated because lace was so closely associated with the aristocracy. Lacemakers were executed during this period for having contributed to a degenerate and excessive lifestyle.

The production of handmade laces was slowly revived after the revolution but with the coming of the Industrial Revolution and the invention of the bobbinet machine in 1809 by John Heathcoat of England, another blow was dealt to the industry.⁴ Machine-made laces were accepted because of their economy and the making of handmade laces was never again as widespread as during the seventeenth and eighteenth centuries.

In the twentieth century a few lacemakers still

⁴Zion Lace Industries, The Romance of Lace (Chicago: Zion Lace Industries, 1920), p. 13.

produce handmade laces in the traditional manner for trims on clothing and linens but they exist as novelties and infrequent reminders of a nearly lost art.

Bobbin lace now has been embraced by textile artists in Europe and the United States. By applying contemporary design and the use of a wide variety of fibers, they have revived the technique for the production of two- and three-dimensional objects.

CHAPTER II

BOBBIN LACE TECHNIQUE

Lace is a fabric which has an open net-like structure and ornamental design which is incorporated into the fabric as it is produced.

In bobbin lace the fabric is made by the crossing, twisting, and plaiting of many pairs of threads. These threads are attached to a pillow--or stuffed support--by means of straight pins which provide stability to the lace as it is worked. The excess supply of each thread is wound onto a long slender bobbin.

The pillow upon which bobbin lace is worked is fabric covered and filled with any of a variety of materials such as fabric, sand, or sawdust and has a rigid base. The requirement of the pillow is that a pin can be inserted easily into it, yet be held rigidly to insure stability as the lace is worked. The shape of the pillow can vary greatly according to the type of lace to be produced. A cylindrical pillow on which one works around the circumference is particularly appropriate for long bands of lace which can be worked continuously without the need to move the work in progress. Flat, slightly mounded pillows are used for making laces which are worked in many directions. The shapes of pillows have varied greatly

from region to region in Europe--their shape becoming symbolic of that region.

The bobbins, which are usually made of wood or bone, are normally three to four inches long and quite slender. There is great variety in design determined by both function and the desire for uniqueness by the lacemaker and bobbin maker.

The thread is wound onto the upper portion of the bobbin, called the shaft, and it should be possible to wind a sufficient supply of thread onto the shaft to prevent the need for frequent knotted joints. The bobbin also functions as a weight to provide some tension to each thread to aid in producing a uniform lace and prevent the entangling of threads. In some types of bobbin lace making, the bobbin itself passes through loops of thread, consequently bobbins used for this technique must be of sleek design to facilitate such a procedure.

In the traditional application of the techniques of bobbin lace, a design is first planned and then a pricking is produced. The pricking is a piece of durable paper in which small holes have been pierced based on the original design. It is attached to the pillow and the holes indicate the placement of pins in the making of the lace and where crosses and twists should occur. Consequently, the pricking acts as a design guide which also insures uniformity and consistency in execution of the planned lace.

In the process of making bobbin lace two pairs of bobbins are handled at a time, one pair in each hand. There are two

basic movements which can be made. With either or both of the pairs the right hand bobbin is passed over the left--the twist--or the inside bobbins of each pair are crossed left over right--the cross. When these two moves are repeated alternately a braid is produced. If the combination cross-twist-cross is performed with progressive pairs of bobbins across a horizontal line, a fabric is produced which is structurally the same as tabby or plain weave. The only difference being that two weft threads have been worked at a time instead of one. The pair acting as the weft are referred to as the active threads, and the pair that act as warp are the passive threads. This combination of motions is known as the linen stitch, or whole stitch. This stitch is used to make the solid areas in many bobbin laces.

The open net-like areas of laces are made utilizing a great variety of combinations of the cross and twist moves. The greater the number of twists at any one point, the longer the line produced, and its corresponding adjacent open or negative area.

There are two basic methods in which bobbin laces can be produced. In the first, straight lace, a design is planned and bobbins are set up so that the entire width of the lace is worked simultaneously. This may involve hundreds and possibly even thousands of bobbins depending on the size of the fiber and the size of the work. With this method, the work progresses from top to bottom with all design areas, both figure and

ground, worked simultaneously. Traditionally a pricking is used in the execution of straight laces.

The second type of lace work is tape lace or free lace. Once the design is planned the piece is worked in meandering bands which can curve and twist at any point. Because tape lace is made in narrow bands, the number of bobbins in use rarely exceeds a dozen pairs. As the work progresses and open areas are to be filled in, the fabric is made structurally sound by utilizing a joining technique called crochetage --or sewing--which involves pulling a loop from one of the active bobbins through the edge of the existing tape and drawing the other active bobbin through the loop. Prickings are not used with tape laces.

The two different methods of execution of bobbin lace produce laces of somewhat different appearances. The tape laces are dominated by the flow of bands through the fabric while straight lace can be constructions of much more static figures.

CHAPTER III

APPLICATION OF TECHNIQUE

Because of its outstanding visual quality of movement, tape lace was the process chosen for exploration in this thesis. Tape lace lends itself to the incorporation of spontaneity in both design and execution, also a desirable attribute. However, the cross and twist were applied in a non-traditional manner for the thesis work to produce a fabric that would have a new and unique appearance, not one that merely echoed the traditional lace motifs in new arrangements, scale, or fiber.

The designs for the two-dimensional bobbin lace works were derived directly from watercolor sketches. These sketches were made using a free and spontaneous technique which produced rich blends of color plus unique forms. Many sketches were made and from those, sketches were selected which possessed the most desirable coloration and form. Following the sketches closely, fibers were dyed and placed in the work in a carefully controlled manner to reproduce the selected watercolor sketch. This approach was applied in the production of small laces as well as large.

For the three-dimensional pieces many line drawings were made, again using a very free approach. From these a selection

was made for each work which was most appealing to the lace-maker.

Rather than utilize traditional stitches, the work developed as it was executed. Constant decision making went on as the work progressed with the determination of placement of positive and negative areas, coloration, and surface texture.

A wide variety of textile effects are possible when using the cloth stitch and adjusting the tensions of the various pairs of threads. Fabric can be produced that has a 50/50 weave, that is, the active and passive fibers are equally visible. A weft faced fabric, where only the active pair shows, is also possible as well as a warp faced fabric, where the passive fibers cover the active. It should be noted that these particular effects are more difficult to produce when using materials which are not highly flexible.

This variation in the linen stitch application also lends itself to the use of very subtle color change in the execution of a work. When fibers are dyed in a wide range of values of one hue, and then each pair of a set of bobbins is wound with a different value, it is possible to manipulate the bobbins so that any one pair could dominate at any given point. Thus the color flow can be constantly manipulated with the use of linen stitch plus the interchanging of active and passive pairs.

This medium is one which also can be executed in a very

wide range and variety of fibers and other linear elements and with each a unique surface and work can be produced.

When working in three dimensions, there are additional challenges, as the execution of bobbin lace requires a pillow or some other support while working.

What has evolved in this thesis is a textile technique in which the lacemaker has great freedom and is always in control. At every point in the execution of the lace, decision making as to both image and color placement takes place. The technique does not dominate but allows the lacemaker to be continually creative.

CHAPTER IV

CONCEALED MOLLUSK

The first creative bobbin lace, made prior to beginning this thesis, was Cytoplasmic Bridge (see figure 1). The design source for it was a line drawing from a scientific illustration from which the overall flow of the work was determined (see figure 2). Then, superimposing a watercolor sketch over the line drawing, an assignment of color placement was made (see figure 3). Silk cord was chosen and dyed by hand in a wide range of pinks and tans. Working with the silk cord made it possible to utilize fully the color change possibilities provided by the use of the linen stitch.

Wishing to include a work in this thesis that had the same rich, flowing qualities of Cytoplasmic Bridge plus the same spontaneity of design and execution which had been used, a lacework design was selected which would involve the use of a similar fiber, dying, and execution technique. A line drawing was made which lent itself to the development of a work which would incorporate a grid system (see figure 4) into the design while still allowing a flowing movement similar to that in Cytoplasmic Bridge. This was a particularly challenging concept for what was needed during execution was to concentrate on flow and color placement

and simultaneously to build the negative grid space. The color placement was determined by a watercolor sketch which was loosely transferred to the outer form of the grid system.

Contessa silk cord was used for the fiber and dyed by hand using Cushing Perfection Dyes in values of gold and silver gray.

Concealed Mollusk (see figure 5) was worked on a large rectangular pillow which eliminated the need for moving the work in progress.

In the lacemaking process no more than two pairs of threads from any quadrangle were carried over to an adjacent quadrangle. Because of this, plus the use of a large number of color values, there were many threads which needed to be concealed in the back of the lace. Once the lace was completed, this was done by knotting each pair, needle weaving the ends into the fabric for a short distance, applying a small amount of Sobo glue to insure permanence, and then clipping the ends off at the fabric surface.

The lace was blocked by pinning it down onto tracing paper on which the outline of the work had been drawn. It was then steamed using an iron; however, the iron was never allowed to touch the fabric to prevent the crushing of the surface.

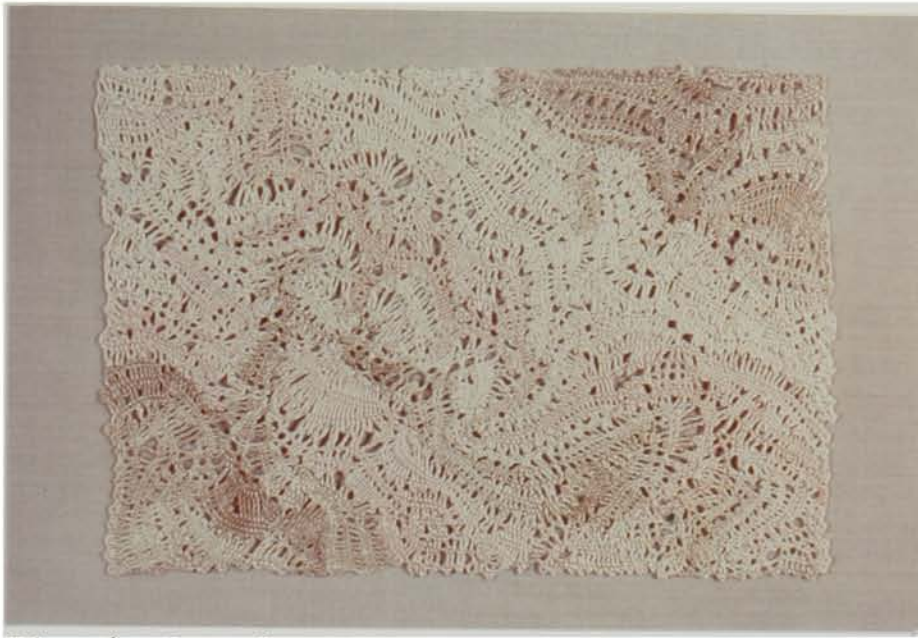


Fig. 1 Cytoplasmic Bridge ($11\frac{1}{2}$ by 8 inches).

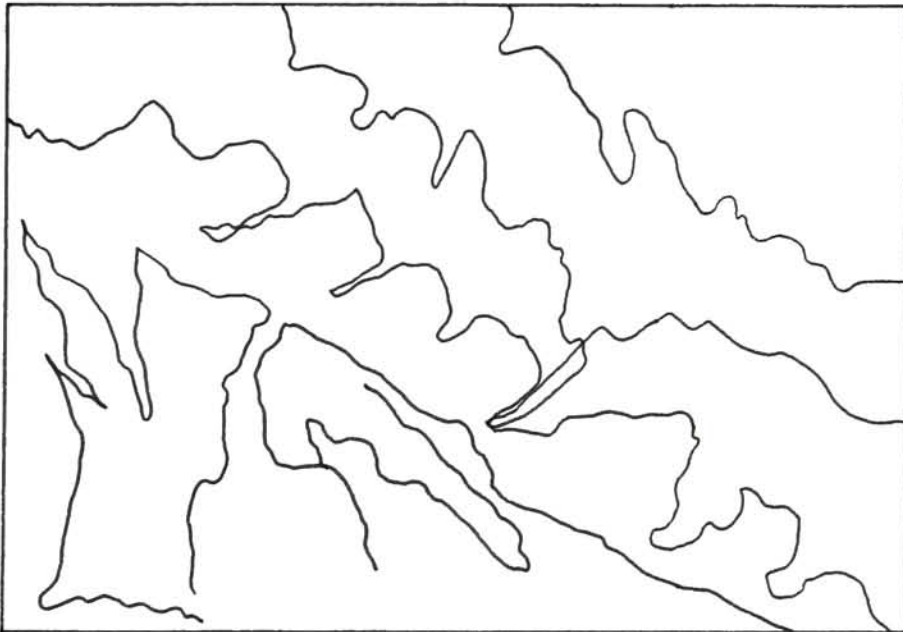


Fig. 2 Line Drawing for Cytoplasmic Bridge.



Fig. 3. Watercolor Sketch for Cytoplasmic Bridge.

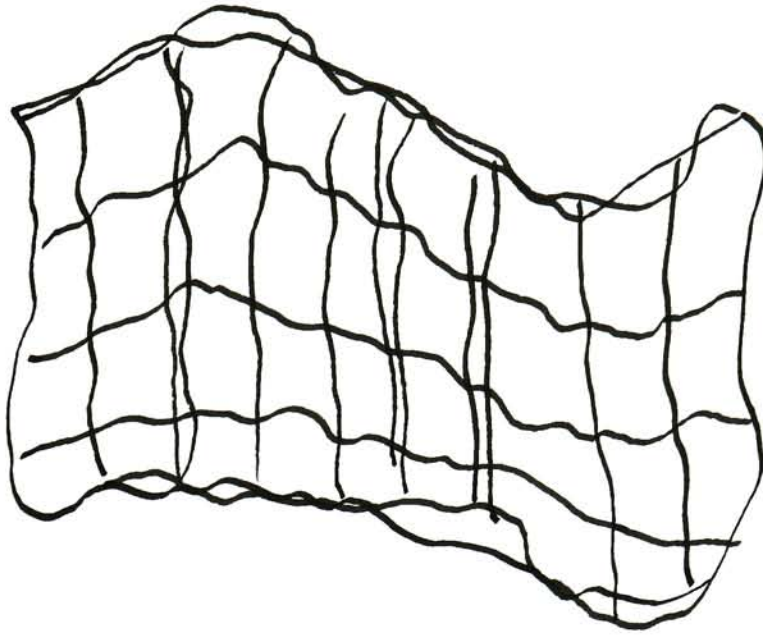


Fig. 4. Line Drawing for Concealed Mollusk.



Fig. 5. Concealed Mollusk ($18\frac{1}{2}$ by 14 inches).

CHAPTER V

SEA FERN

Small scale pieces were produced before beginning the thesis, that were a maximum of 6½ inches on a side (see figures 6, 8, and 10). Each of these works derived directly from a watercolor sketch (see figures 7, 9, and 11) for size, form, and color. In these lace pieces it was possible to obtain great freedom in use of color and it was this that was intended to be duplicated. The sketch for Sea Fern (see figure 12) had a look of layering of color, and in order to recreate this effect, two sizes of silk fiber--Contessa silk cord and a much finer silk cord--were used. The Contessa was dyed with stronger coloration and the fine silk with lighter values in order to produce an illusion of depth or layering. This finer silk was much less receptive to the dye than the Contessa silk, which fortunately aided in achieving the goal for the piece. Cushing Perfection Dyes were used for both fibers.

The watercolor sketch was traced and Sea Fern (see figure 13) was produced working from the sketch for color placement and from the tracing for form.

This piece was steamed in the same manner as Concealed Mollusk to insure the open net-like effect initially conceived.

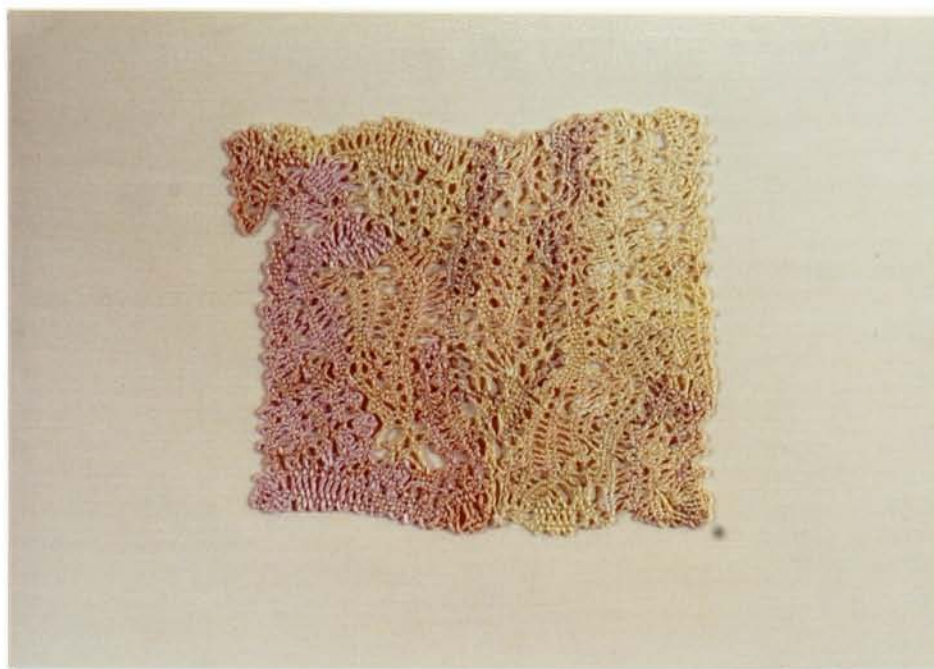


Fig. 6. Untitled Lace 1 ($5\frac{1}{2}$ by $4\frac{1}{4}$ inches).



Fig. 7. Watercolor Sketch for Untitled Lace 1.

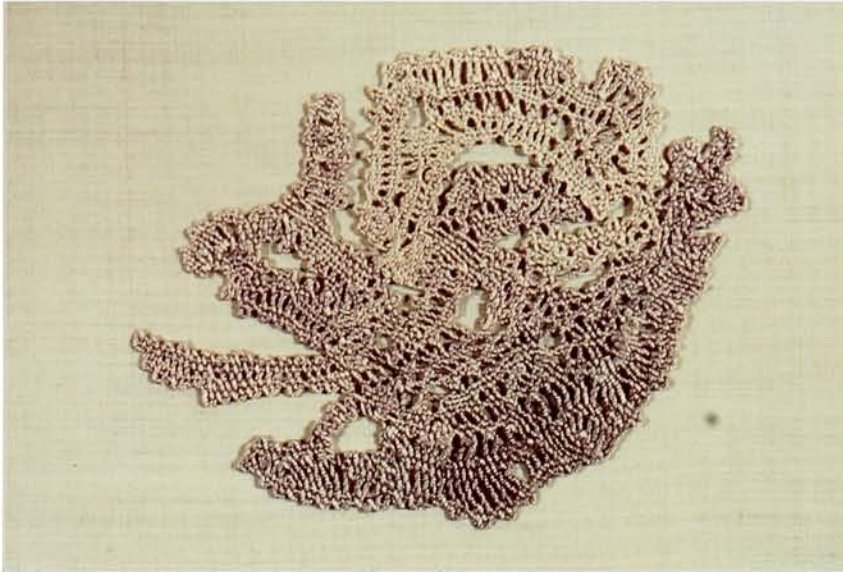


Fig. 8. Untitled Lace 2 ($6\frac{1}{2}$ by $4\frac{3}{4}$ inches).



Fig. 9. Watercolor Sketch for Untitled Lace 2.

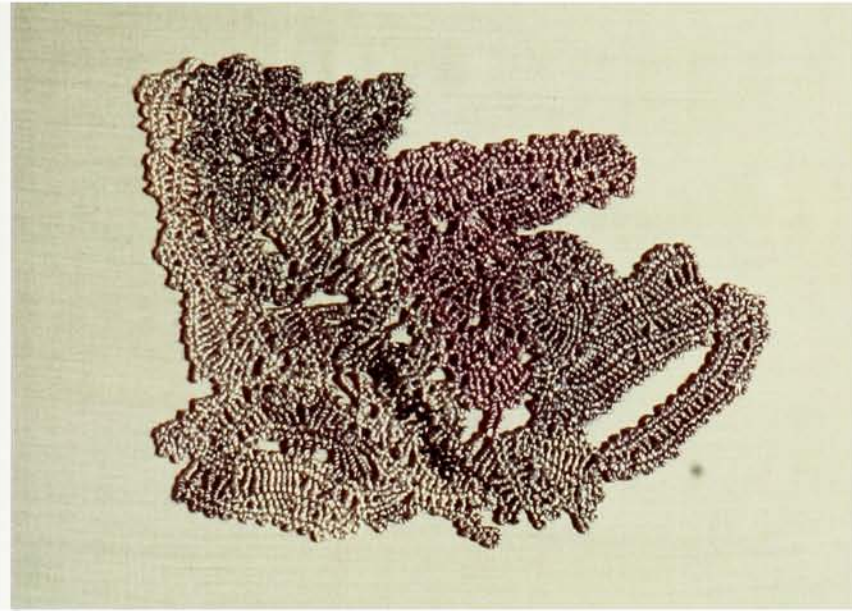


Fig. 10. Untitled Lace 3 ($6\frac{1}{4}$ by $4\frac{3}{4}$ inches).



Fig. 11. Watercolor Sketch for Untitled Lace 3.



Fig. 12. Watercolor Sketch for Sea Fern.



Fig. 13. Sea Fern ($7\frac{1}{4}$ by $5\frac{1}{4}$ inches).

CHAPTER VI

BOBBIN LACE ON HANDMADE, RELIEF
EMBROIDERED FELT

The first step in the production of this work was the making of handmade felt. Fleece from Australian Corridale sheep was carded and stitched between two layers of cotton fabric. This assemblage was then subjected to soap, agitation and extreme temperature change via a cycle in an automatic washing machine. It was subsequently dried in an automatic dryer. When the fleece was removed from between the fabric, it had felted; that is, the fibers had interlocked because of the brutalizing and a nonwoven fabric was produced.

The gray image was then stitched onto the felt using a sewing machine. The presser foot was removed, and the feed dog lowered, allowing the felt to be guided in any direction. When working in this way the sewing thread tends to pull tightly, producing a relief form with the fabric.

Then finally, working within the design produced by the stitching, bobbin lace was introduced using a silver metallic thread (see figure 14). When working with bobbin lace in this manner it is possible to obtain somewhat different effects, most notable being long single linear

elements, because the lace can be permanently supported by crocheting into the felt or sewing machine work at any point.



Fig. 14. Bobbin Lace on Handmade,
Relief Embroidered Felt
($8\frac{1}{2}$ by $6\frac{3}{8}$ inches).

CHAPTER VII

RED AND BLACK

This piece, rather than trying for subtle color change, evolved from a desire to make a small piece which would have bold, solid color in a wide range of hue and a more solid fabric. For form, color, and dimension, a watercolor sketch (see figure 15) was used. J. & P. Coats Six Cord Mercerized cotton yarn was chosen for this piece because of its hard, even appearance and desirable size. It was dyed by hand using Cushing Perfection Dyes.

When Red and Black (see figure 16) was completed and lifted from the pillow, it twisted and curled in a manner much different from the silks. The hard fiber and the design utilizing long bands--rather than a strong central form--apparently caused the lace to react in such a fashion. Rather than flattening and forcing the piece to any preconceived notions, it was left in this form. With a bit of turning and rotating a pleasant form was found which the piece now maintains--with its own curls and twists included.



Fig. 15. Watercolor Sketch for Red and Black.

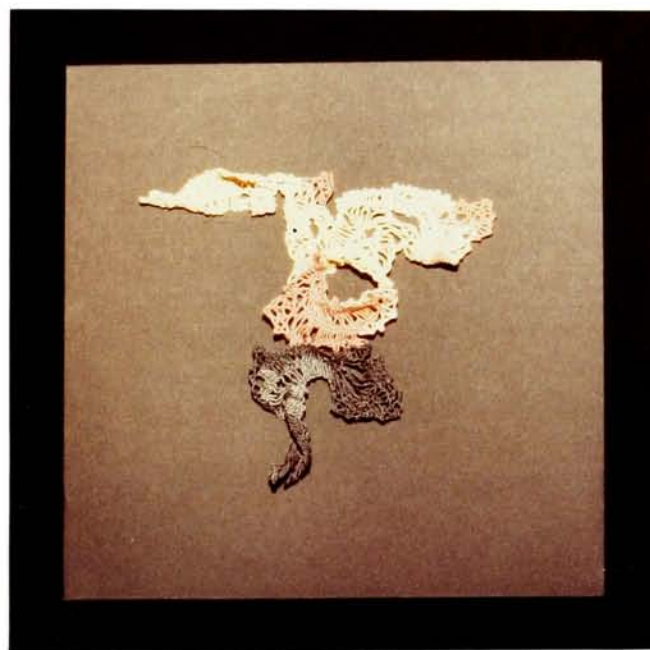


Fig. 16. Red and Black ($5 \frac{1}{8}$ by $4 \frac{3}{8}$ by $\frac{5}{8}$ inches).

CHAPTER VIII

ENTANGLING ALIGNMENTS

Working on a much larger scale necessitates some changes in approach to the bobbin lace technique.

Cotton rope was chosen for explorations on a monumental scale because this material was appropriate for hand dying and additionally, it was available in a very wide range of sizes.

Because of the basic nature of the bobbin lace technique, some supporting work surface is required. As a substitute for a pillow, flat fibrous insulating wallboard was used. It could be penetrated by a T pin (note the change in scale here, too) yet hold it rigidly.

When working with ropes in bobbin lace, bobbins are not used except for the finest seine twines. The substitutes used depended on the size rope, and included butterfly bobbins, butterfly bobbins bound with rubber bands, and for the largest, allowing the ropes to hang loose.

It is most practical to work the areas with the largest ropes first and then subsequently with each diminishing size, for crocheting is best executed looping smaller ropes into larger.

Three cotton rope pieces had been previously completed. The first, Amnion (see figure 17), used cords in their natural

white state and explored visual movement and textural variety. It used cords varying in size from fine seine twine to three-eighths inch diameter rope. The design for this piece was a line drawing inspired by a scientific illustration (see figure 18). The second of the three previous rope pieces, *Sufferance* (see figure 19) incorporates color into the experimentation, with the placement of color planned from a watercolor sketch (see figure 20). The third of this series added the element of layering to the rope work (see figure 21). For this one the form and color were also taken from a watercolor sketch (see figure 22). These three previous rope works were no longer than four feet on any side.

Each of these three pieces was initially designed to be hung flat on a wall. However, it was discovered that they possessed wonderful draping qualities that could be encouraged in installation--with each cord reacting differently to such manipulation.

Because of the lack of flexibility in the larger ropes, plus their large dimension, the subtle color change techniques that were used in the very small works were not used, and the color change was done from area to area rather than within areas.

For a larger piece for the thesis, a decision was made to use all the elements explored in the previous work--textual variety, visual movement, color, layering, and three-dimensionality, in yet an even larger piece.

The work was designed from a small--four by five inch--

color sketch (see figure 23). The form was enlarged onto brown paper and the coloration in the ropes was obtained using Chlorantine dyes to match the drawing.

Entangling Alignments (see figure 24) was executed using cords ranging in diameter from three thirty-seconds to three-quarters inches.

The finishing of large rope ends is a particular problem because of the open nature of lace, which makes concealment of such ends difficult. In addition the ropes quickly unply when cut. Working from the back, the approach used was to lay a pair of ends along ropes in front of them, determine where to cut, apply a liberal coating of Sobo glue to both ends at the area of cutting, and allow them to dry. When the glue was dry, the ends were cut at the appropriate point and bound together using appropriately colored thread. Then these ends were glued to the back of the selected facing ropes, insuring that the freshly cut white undyed ends were not visible from the front.

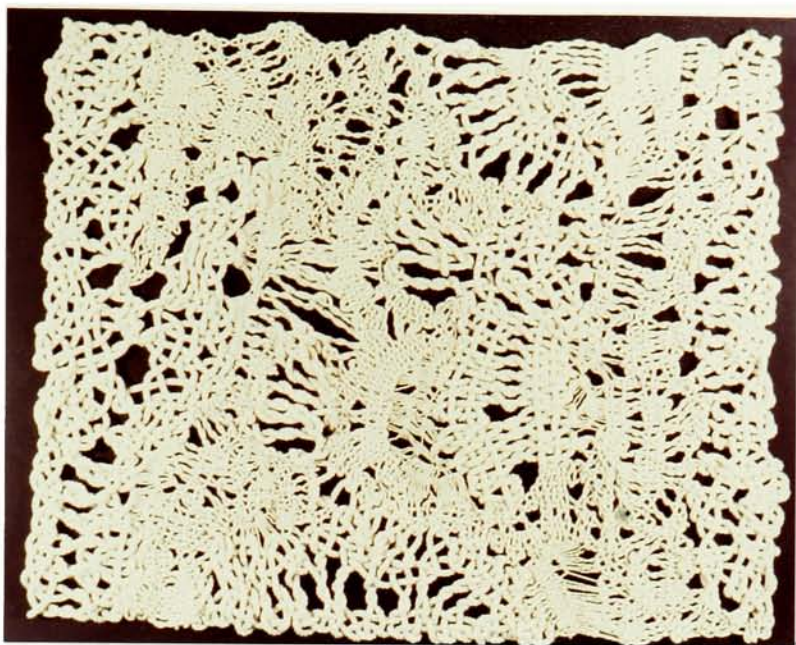


Fig. 17. Amnion (44 by 25 inches).

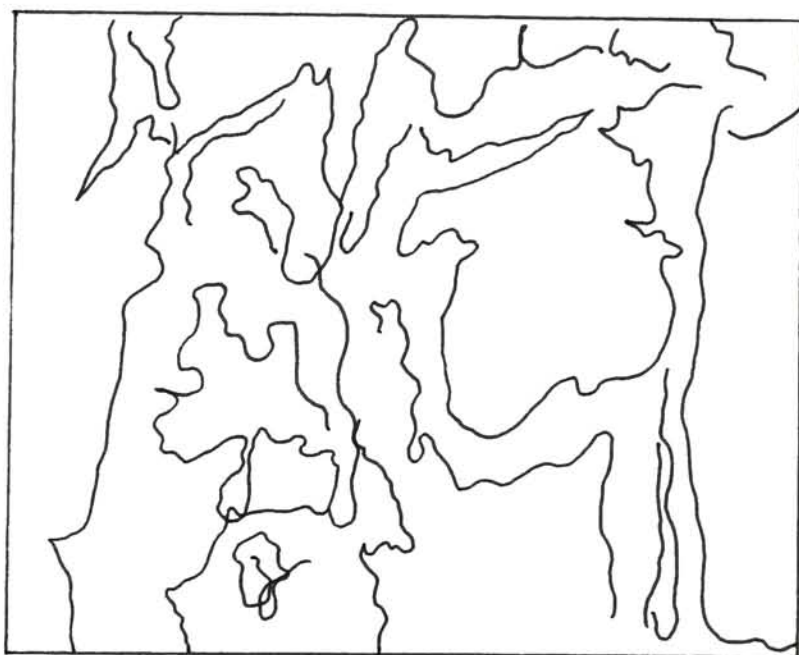


Fig. 18. Line Drawing for Amnion.



Fig. 19. Sufferance (42 by 40 inches).



Fig. 20. Watercolor Sketch for Sufferance.

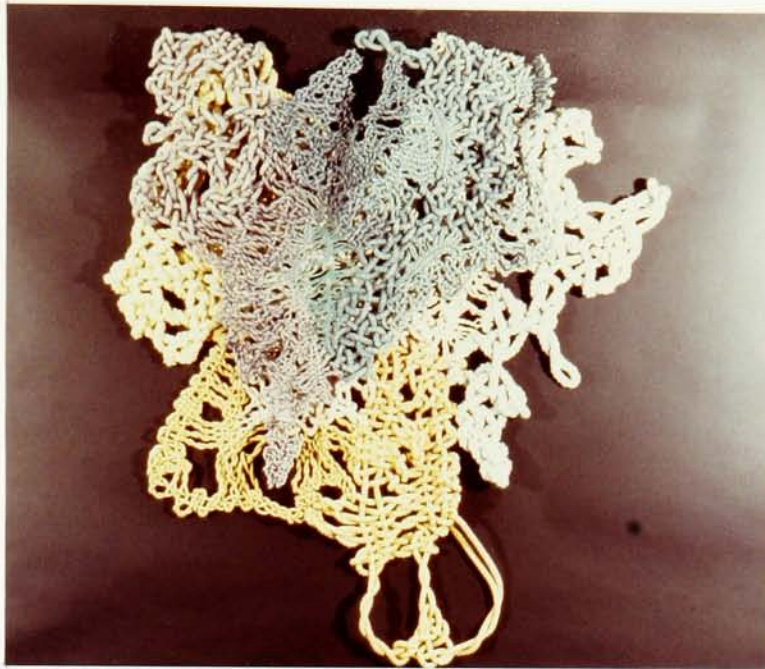


Fig. 21. Untitled Rope Lace (39 by 46 inches).



Fig. 22. Watercolor Sketch for Untitled Rope Lace.



Fig. 23. Watercolor Sketch for
Entangling Alignments.



Fig. 24. Entangling Alignments
(68 by 77 inches).

CHAPTER IX

CARATITO

There are additional considerations when working with bobbin lace to create a form that is three-dimensional and is created as such. The first is the choosing of a fiber of appropriate flexibility which can be satisfactorily manipulated yet maintain its form when removed from support. The second is the making of a support which acts as a substitute for the pillow and has the form the piece is to have upon completion.

A basket, Have a Heart (see figure 24), had been previously produced in this fashion employing randomly dyed raffia. A pillow was made for it in the form of the finished piece as drawn in a sketch (see figure 26) using a tightly woven fabric firmly stuffed with sawdust. The basket was executed in the usual manner, then the sawdust was removed from the form, and the fabric cover was withdrawn. The raffia proved to be a fine choice of material as it interacted well, yet was self-supporting, and the basket had the additional quality of being flexible when handled.

A design was selected for the thesis which could be executed in a similar fashion. Working from a line drawing (see figure 27), four elongated forms were produced which fit

together as a single unit. The material chosen was raffia which was dyed using Cushing Perfection Dyes with color placement to coincide with a watercolor plan.

It is interesting to note that the dying of the raffia created some unusual effects. The dye was not absorbed in the same fashion on the two sides of the fiber, which resulted in two strengths of color. This, although unplanned, was most acceptable, for it gave an added richness to the colored raffia. Also the area which appears as a soft green was actually dyed with black, an unusual variation, but again more than acceptable.

When working with Caratito (see figure 28), several things were discovered which made production easier. With Have a Heart, the earlier work, time was lost constantly winding bobbins. With Caratito, bobbins were abandoned, and because each strand of raffia is approximately a yard long, the strands were allowed to hang loose. There were no problems created whatsoever. It was also discovered that pinning the sawdust form onto a pillow was very helpful. The form alone was very light in weight and a difficult shape to keep steady otherwise.

When dealing with the ends to be woven in, it was much easier to needle weave them back into the work as it progressed and simply snip them off on the surface, rather than trying to work on the inside once the pieces were completed.

Once the inner forms were removed, the baskets were

steamed with an iron without actual contact between the iron and the forms. This caused the raffia to soften and shrink slightly which created a relaxed undulating surface.

The individual units were then bound together.



Fig. 25. Have a Heart ($5 \frac{1}{4}$ by $5 \frac{3}{4}$ by 4 inches).

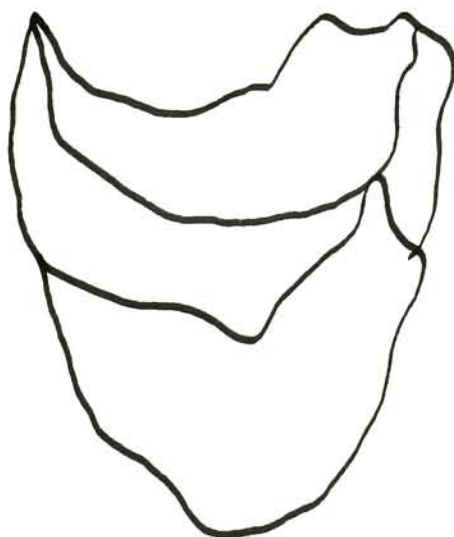


Fig. 26. Line Drawing for Have a Heart.

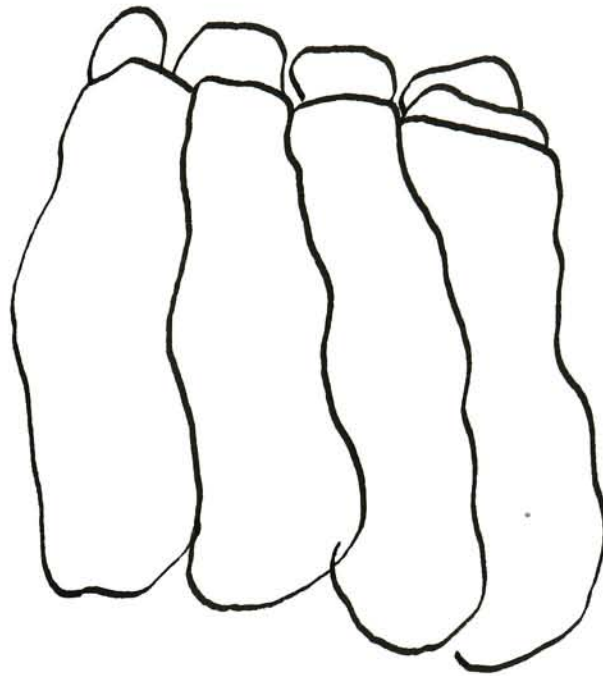


Fig. 27. Line Drawing for Caratito.



Fig. 28. Caratito (10 by $8 \frac{3}{4}$ by $1 \frac{3}{4}$ inches).

CHAPTER X

BLACK AND GOLD BAG FORM

The design for this bag form was from a line drawing (see figure 29). The fiber was a bronze wrapped cotton, with gold colored metallic thread used for the line element.

A sawdust form was also produced for this piece. When the work was executed (see figure 30) it was four separate bands which remained on the form. Once these bands were complete, the gold trim was worked in with a needle using a wrapping technique to simulate the twist element of bobbin lace.

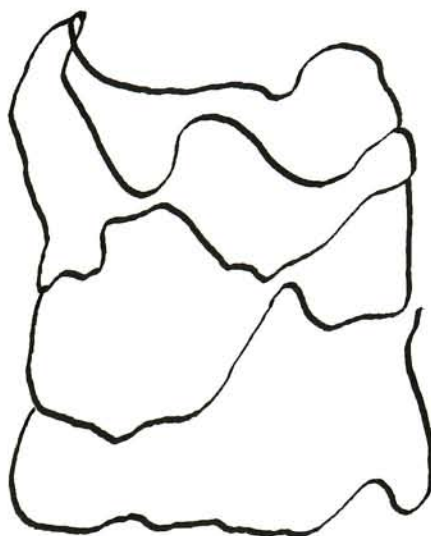


Fig. 29. Line Drawing for Black and Gold Bag Form.



Fig. 30. Black and Gold Bag Form
(4 3/4 by 5 by 2 inches).

CHAPTER XI

NITO BASKET

It is possible to work with less flexible materials in producing three-dimensional bobbin lace. For example, copper wire had been used in a previous project to make a lidded box (see figure 31). In that work, balsa wood was used as a form, as it could be pierced by a T pin, had the strength to hold pins, and could be easily formed. The copper wire reacted somewhat differently to the twist move of bobbin lace, and it was necessary to wind the two elements of a pair about each other in order to produce the desired effect. In doing the cloth stitch a 50/50 close weave was not possible and the wire had to be bent at each cross to allow the elements to come together.

Working with nito, a natural vine, was much like working with wire, but created some additional problems. The material is only slightly flexible and needed to be soaked and then kept moist to be workable. This is not a problem in itself, but the material for the support pillow would have to be waterproof while being both malleable and penetrable.

For this purpose a high density Styrofoam used in house insulation was employed. Lamination was necessary, as it came in two inch thick sheets. Working from a line drawing (see

figure 32) to produce the form, the Styrofoam was carved with a hacksaw blade and smoothed with a Surform. Although a messy process, the result was precisely as desired.

Nito was much like the copper wire because of its similar stiffness, and consequently their final textile effects are similar (see figure 33).

Working with the nito necessitated a few changes in the bobbin lace techniques. It was impossible to execute the crochetage stitch because of the lack of flexibility, so a single end of the active pair was twisted, stitched through the existing lace, then twisted with its mate again for fabric stability. Bobbins were unsuitable and the vines were allowed to hang loose. Because of the many irregularities of the vine it was not a fluid fiber to work with. All during the lace-making process it was necessary to stop and soak the area in progress, for the handling of the vines caused them to dry out quickly. As with the raffia work, the ends of the nito were concealed as the work progressed.

It was desired to have the flaps of the basket stand out from the form, rather than lay close against it as had happened in *Have a Heart*, an earlier raffia piece. To do this, additional thicknesses of fabric were attached to the outside of the basket and the flap was produced over this additional thickness.

Removing the form from inside the basket was less of a problem than had been anticipated, for if the Styrofoam did

not cut easily at this point there was danger of cutting the basket. However, the laminating was not permanent, and with a bit of cutting the layers were easily removed from the inside of the basket. In addition, the form of the basket lent itself to easy extraction of the support (see figure 33).

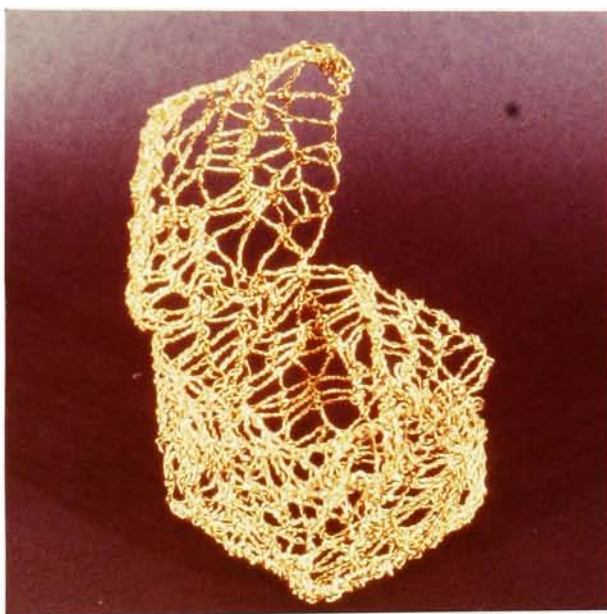


Fig. 31. Copper Lidded Box (3 by 3 by 3 inches).

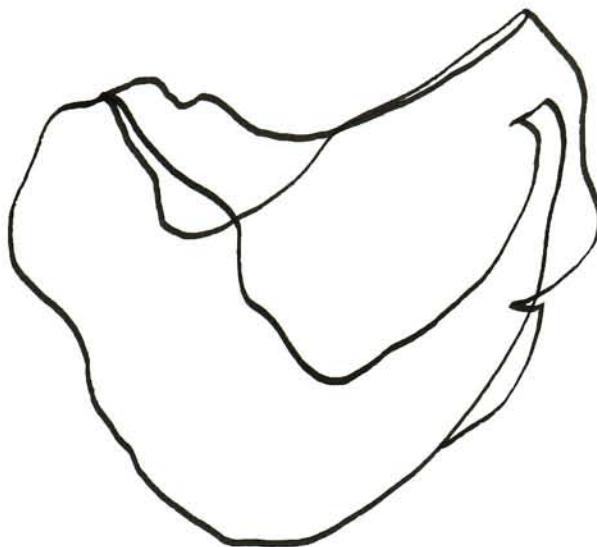


Fig. 32. Line Drawing for
Nito Basket.

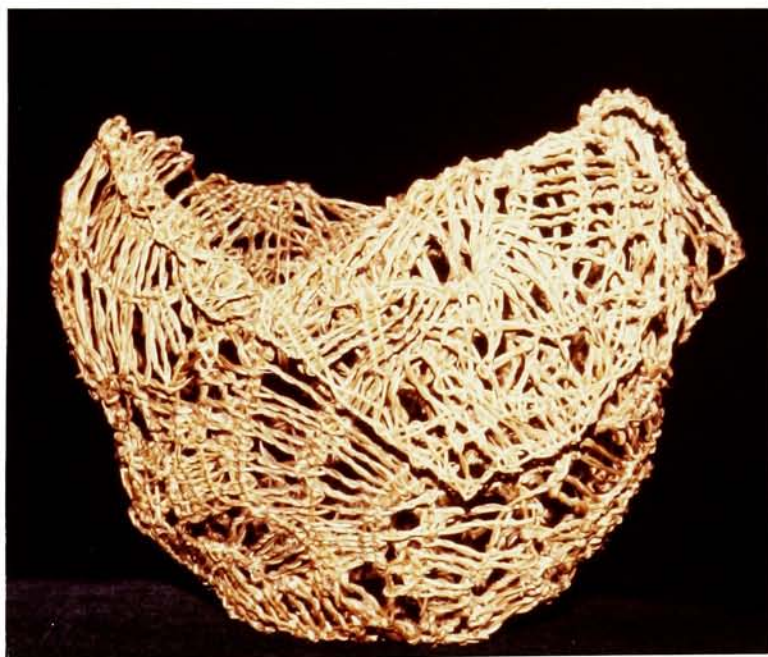


Fig. 33. Nito Basket (14 by 10 by 10½
inches).

CHAPTER XII

EASY TORTURE

Easy Torture (see figure 34) evolved from a desire to produce a solid, dense geometric fabric, one unlike all the others which had been competed for the thesis.

The fiber chosen was Contessa silk cord which had been dip-dyed in Cushing Perfection Dye in a repeating motif.

A square composed of four isosceles triangles was ultimately selected as the design for the unit form. Twelve squares were produced in a spiraling fashion working over eight pairs of passive undyed threads which formed the axes. In order to make these in identical shape and size, a pricking was used and the number of twists between each axis was counted. When making each square, the beginning point for the colored active thread was carefully chosen to have the coloration in each square unit slightly different.

When the squares were released from the pillow, the take-up in the fabric caused them to pull into a pyramidlike form. In developing the final presentation of the piece, it was desired to utilize this three-dimensionality plus retain the long tendrils which were the extensions of the axes. Thus, rather than mounting the squares as for a wall piece, they were stitched together and presented as shown (see figure 34).

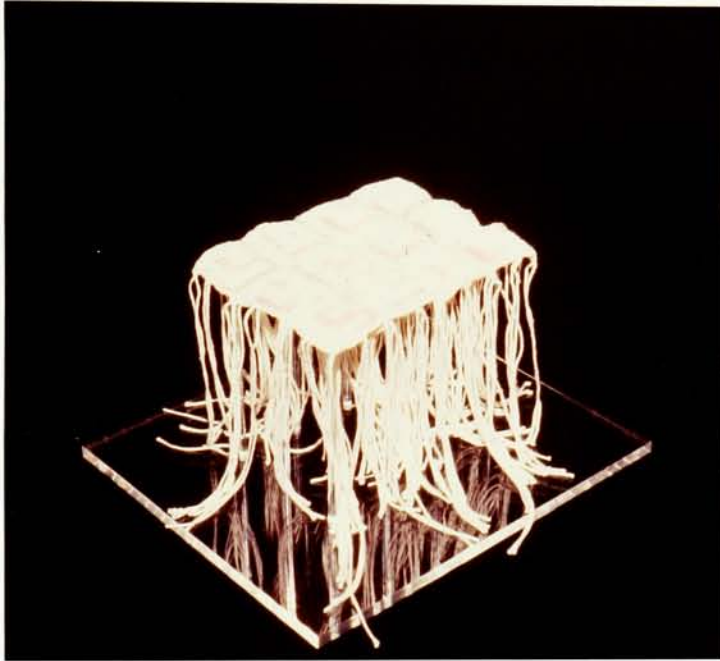


Fig. 34. Easy Torture ($4 \frac{3}{4}$ by $4 \frac{1}{4}$ by $3 \frac{1}{2}$ inches).

CHAPTER XIII

IN CONCLUSION

It is with great pleasure that I look back on the work that went into this thesis--and the show of the work.

The show did not reveal the trials that were unsuccessful --experiments with leather, felting, designs that didn't work, techniques that weren't fruitful.

But through the show a depth of involvement was revealed --work with many types of materials, and a wide range of scale, an uninhibited willingness to work with color and two- and three-dimensional form, plus a spontaneity in design and execution--which was a developed skill. There was, as well, the development of the technique of bobbin lace into a new visual quality.

Hopefully the body of work also revealed in the lacemaker a true enjoyment in working with fiber.

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