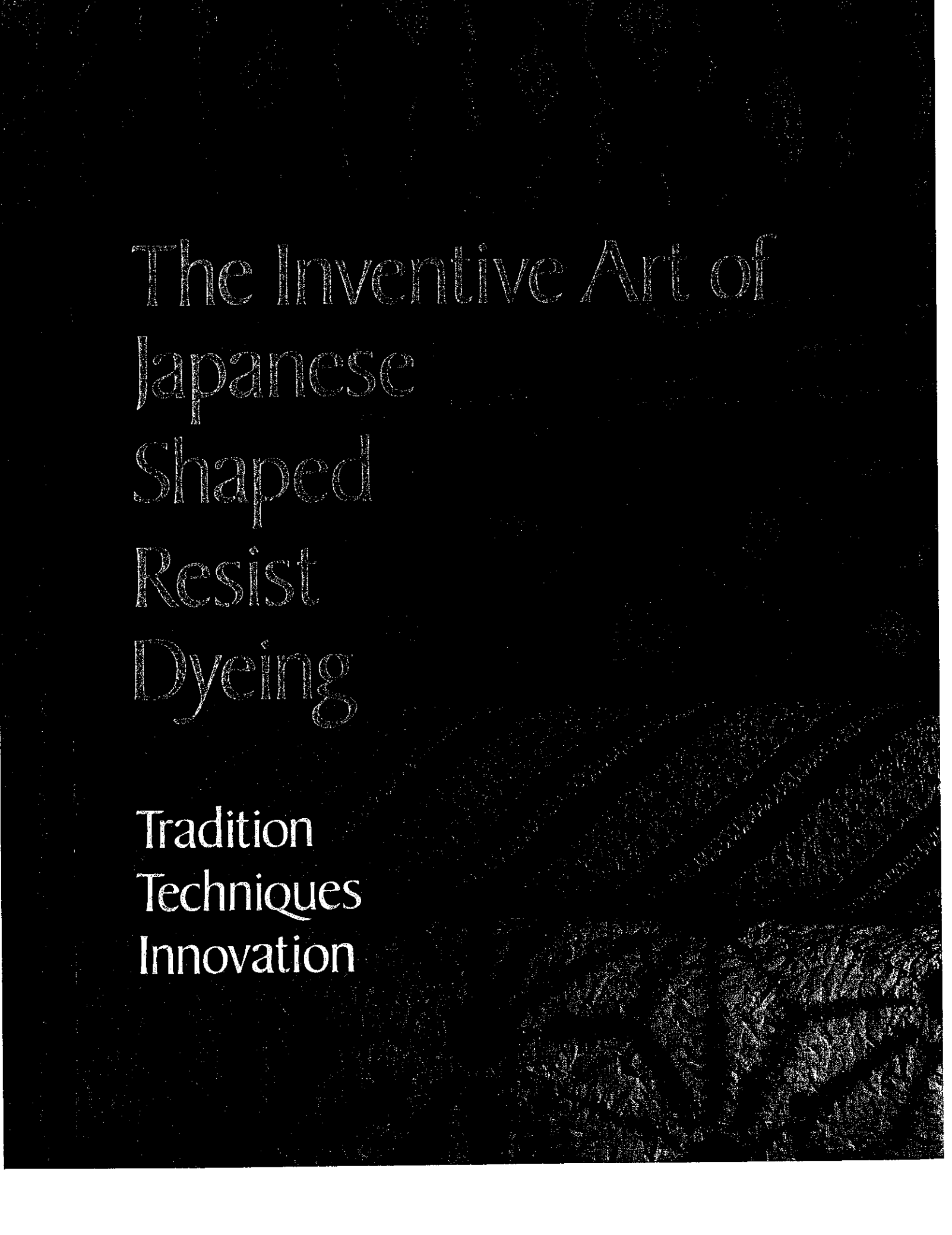
The Inventive Art of Japanese Shaped Resist Dyeing

Tradition Techniques Innovation



SHAPED CLOTH RESIST

Shibori has been defined in the beginning of the book as cloth that is given three-dimensional shape and then dyed. After the cloth is returned to its two-dimensional form, the design that emerges is the result of the three-dimensional shape of the cloth, the type of resist, and the amount of pressure exerted by the thread or clamp that secured the shape during the cloth's exposure to the dye. The cloth sensitively records both the shape and the pressure; it is the "memory" of the shape that remains imprinted in the cloth. This is the essence of shibori.

In Japan shibori designs and patterns are created by shaping the cloth in many ways. Some of the ways have been widely used in other places by other peoples, some are unique to Japan. Cloth may be drawn up and bound; stitched and gathered up; pleated and bound; folded and clamped between boards; or wrapped around a pole then pushed along it to compress the fabric into folds. Further, a cloth may be dyed repeatedly, using a different shaping method each time.

Designs created in this way clearly reflect the touch of each worker. No two persons fold or bind or stitch in exactly the same way—the work of one may be very precise and even, that of another, looser and more free. Likewise, the amount of force exerted on the binding thread, or in drawing up the stitching thread, or in compressing the cloth into folds on the pole, varies from person to person. The effect of each person's hand, and indeed temperament, on the shaping of the cloth becomes imprinted by the dye in the finished piece. This characteristic makes for highly individual results, even within a traditional framework.

In this book, different shibori designs are classified by the way the cloth is shaped and secured, not by historical period or place of origin. Traditional resist-dyeing techniques are described in detail to record old ways that have died or are dying and to open a world of creative possibilities.

Binding

Designs are created by drawing up portions of cloth and binding each such shape with thread. The shape of the cloth, the tension on the thread, and the resisting action of the thread determine the configuration of each unit, while the placement, spacing, and amount of thread affect the way the dye penetrates. The nature of the binding process itself limits the type of motif to circles and modified squares. The Japanese, working within the limitation imposed by the process, have exploited its design possibilities by increasing or decreasing the size of the bound unit. Great circular motifs are depicted in kimono worn by beautiful women in the woodblock prints of Utamaro, while one style of the Edo period is composed of units reduced to the absolute minimum of cloth that it is possible to grasp and bind.

A small hook was invented in Japan to hold the drawn-up portion of cloth taut while it is bound. This tool allows both speed and control of the shape of the cloth. Besides dramatic differences in the size of the bound units and the use of devices such as hooks, the variety of designs and patterns and unique textured surface of Japanese bound shibori are the result as well of the skill of those who shape, bind, and knot the cloth.

CLOSE-WOUND BINDING

A portion of cloth is drawn up with the fingers and held while a thread is wound around it. Each turn of thread must be in tight contact with the previous one. Space between binding threads allows dye to penetrate and mar the clarity of the resisted ring. The amount of cloth that is drawn up determines the diameter of the ring, and the number of turns of thread determines the width of the resisted area.

Resisted ring motifs created by close-wound binding are called *ne-maki* shibori. Dots within tiny resisted areas (*kanoko*; pages 58ff) are also bound by the close-wound method.

RING SHIBORI

Undyed rings on a dyed ground is the simplest design possible to achieve with shibori —and may be the oldest. The fan sutra painting from twelfth century Japan shows a short garment decorated in this way. Plate 4

Thread-Resisted Rings (*ne-maki* shibori): White rings on a dark ground may be used as single design elements or grouped and arranged in various ways. The name *ne-maki* shibori, literally, "base-wound shibori," is used by the Japanese to describe the design as well as the way the cloth is bound. Plates 41, 99

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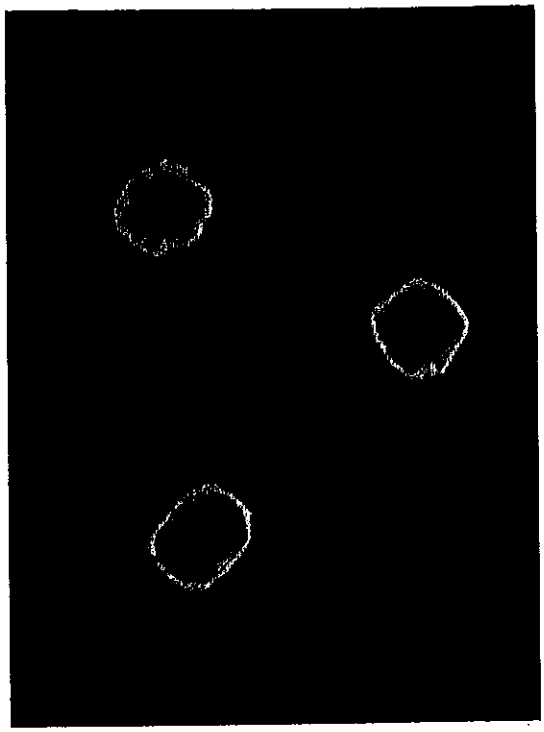
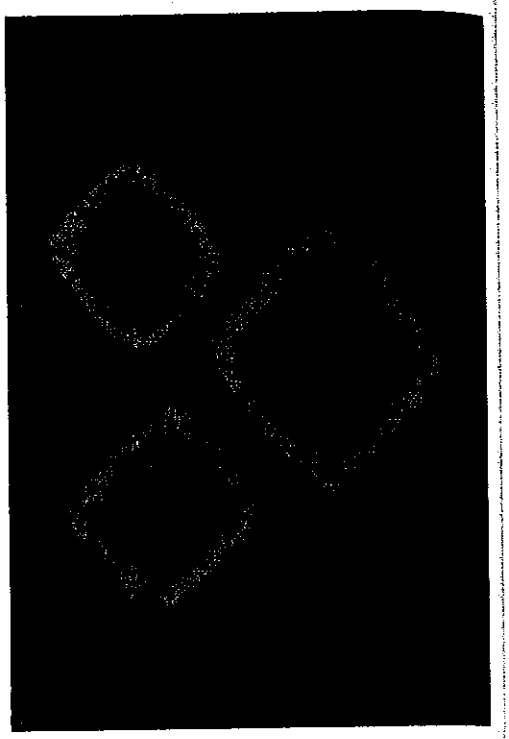
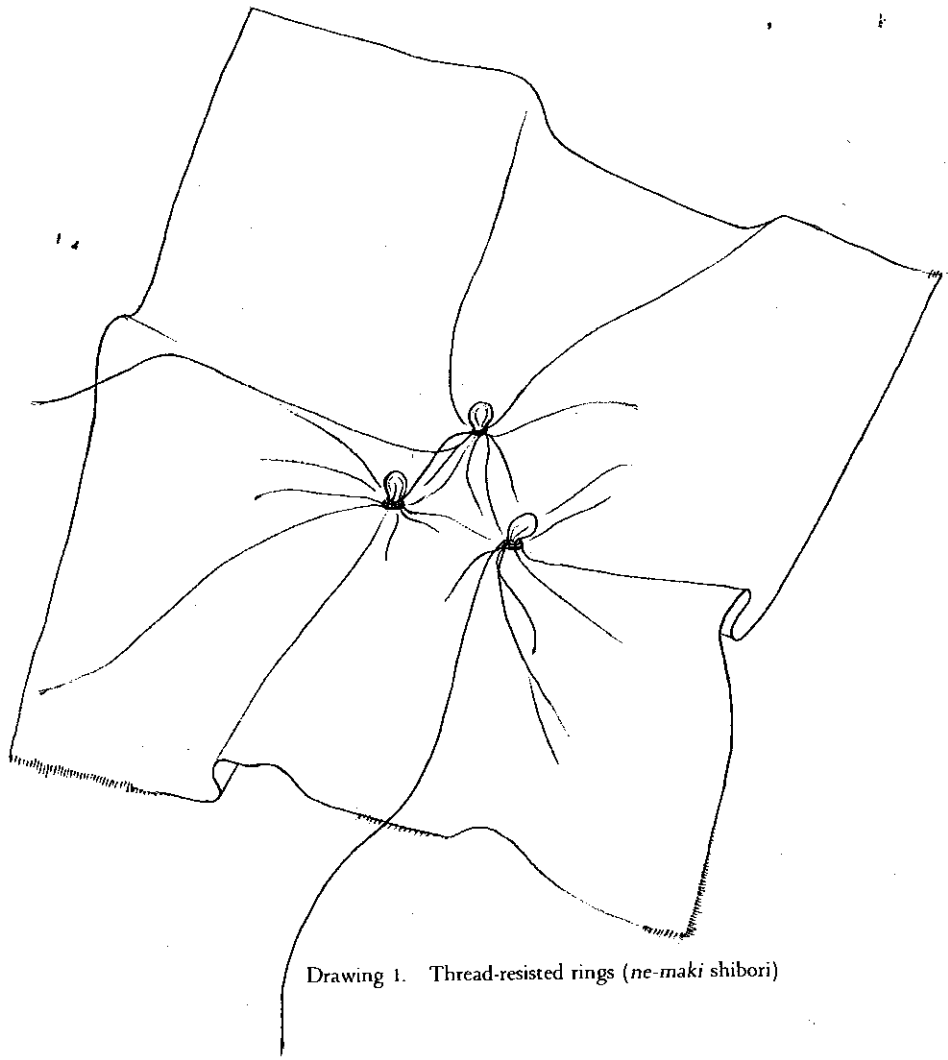


41. Thread-resisted rings (*ne-maki* shibori)



42. Bamboo-resisted rings (*chikuwa* shibori)

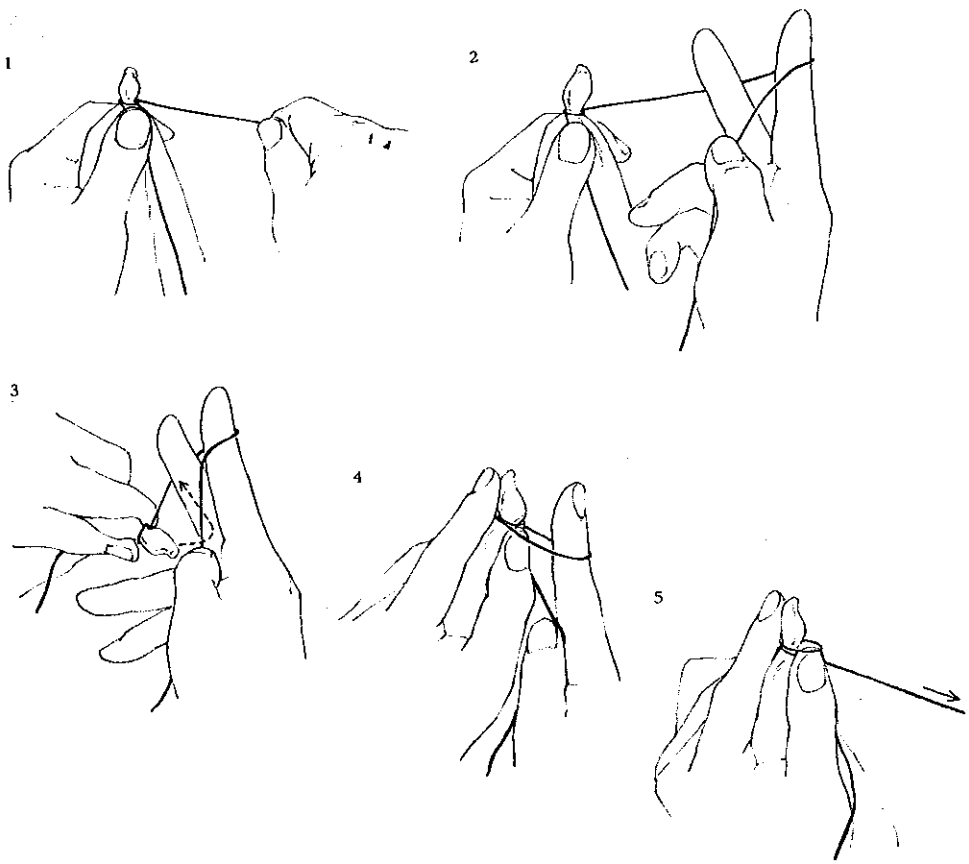


Drawing 1. Thread-resisted rings (*ne-maki* shibori)

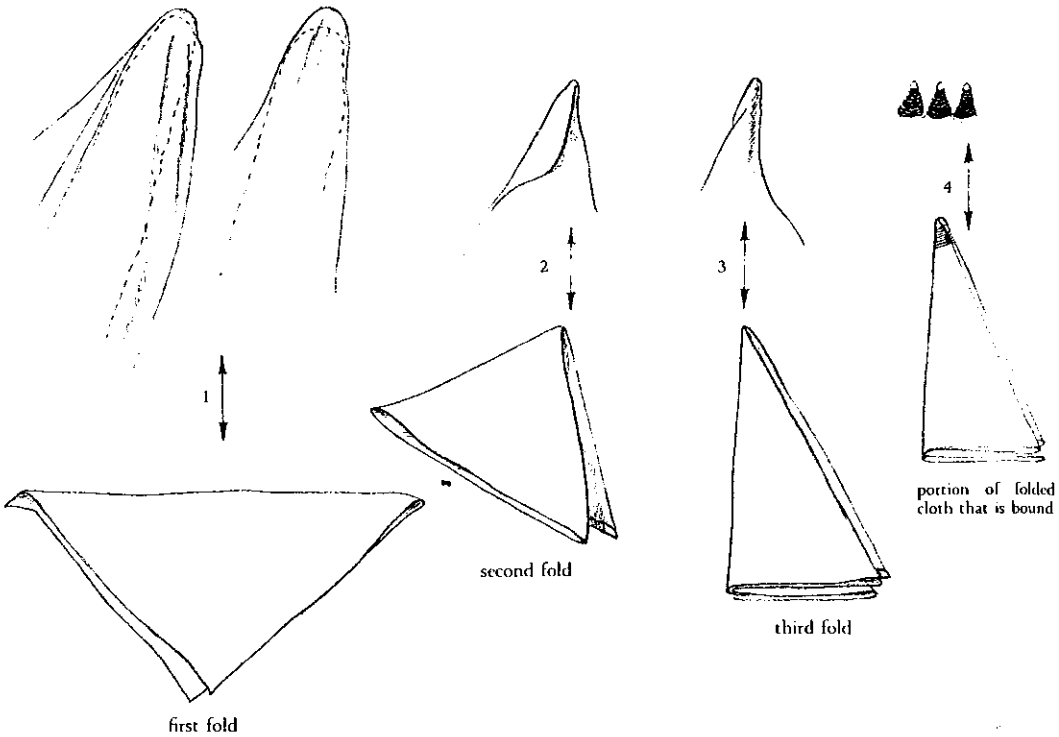
Shaping and Binding: A portion of cloth is drawn up with the right thumb and index finger and held firmly between the left thumbnail and left index finger. The binding thread is brought three or four times around the shaped cloth at the point where the cloth is held, but care must be taken to avoid any space between the turns of thread as it is wound around the cloth. The thread is secured with a special single knot (*kamosage*; see below). The number of turns of binding thread controls the width of the resisted ring. The greater the tension of the thread and the more care taken to achieve a uniform, closely bound layer of thread, the clearer the resisted ring will be. Drawing 1

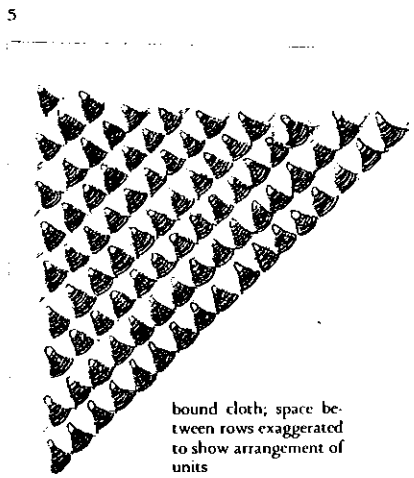
Kamosage Knot: This simple knot is secured by friction, which makes it indispensable in binding *kanoko* and many other types of shibori as well. This also allows the worker to remove the binding thread by just pulling the cloth taut—the knots pop right off. The thread is looped clockwise once around the shaped cloth, with the short end held against the cloth under the left thumb. The right hand, holding the long thread between thumb and index finger, is then rotated so the palm is up, and the thumb at the same time moves so that it is holding the thread tight against the lower joint of the ring finger. The thread passes behind the index finger and middle finger, which are spread apart as the hand rotates, and passes around the index finger to the front of the hand. Drawing 2

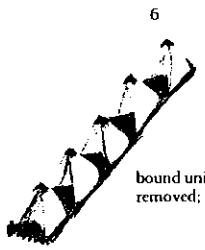
Now the right hand is brought toward the cloth, and the top of the cloth shape is slipped under the thread passing in front of the fingers, then brought up between the index and middle fingers so that a loop is formed around the cloth. Holding this loop in place with the index finger of the left hand, the thread is drawn down and tight with the right hand. This description is general. This knot is executed quickly, with fluid movement of both hands. As with most such simple processes, the worker will find his own method and rhythm after a few trials.

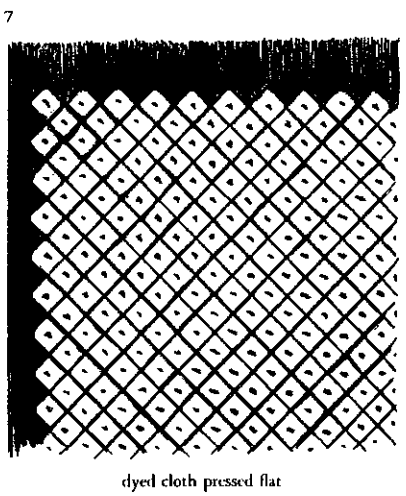


Drawing 2. *Kamosage* knot

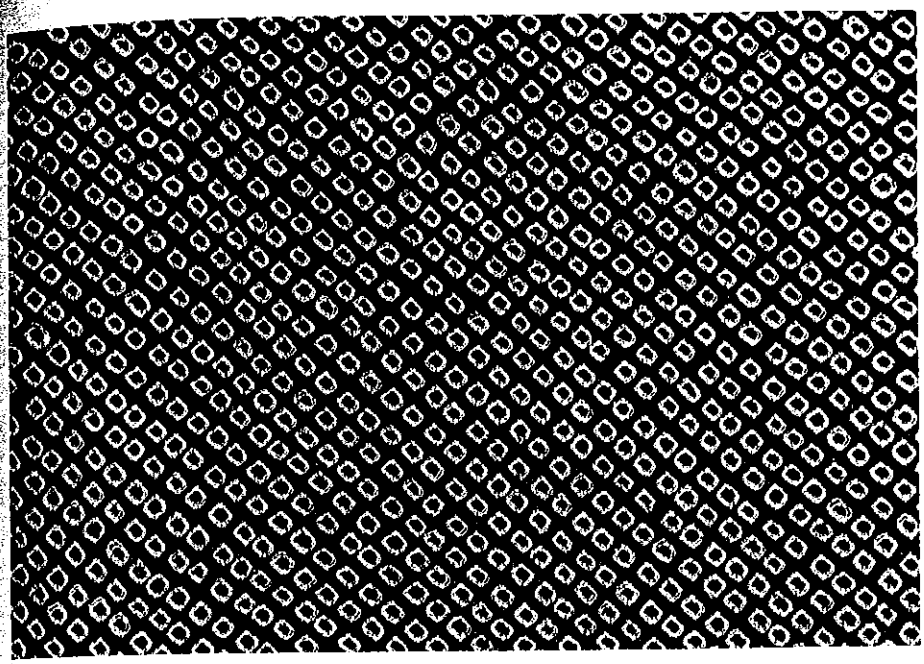








Drawing 3. Dots within squares (*hon hitta kanoko*)

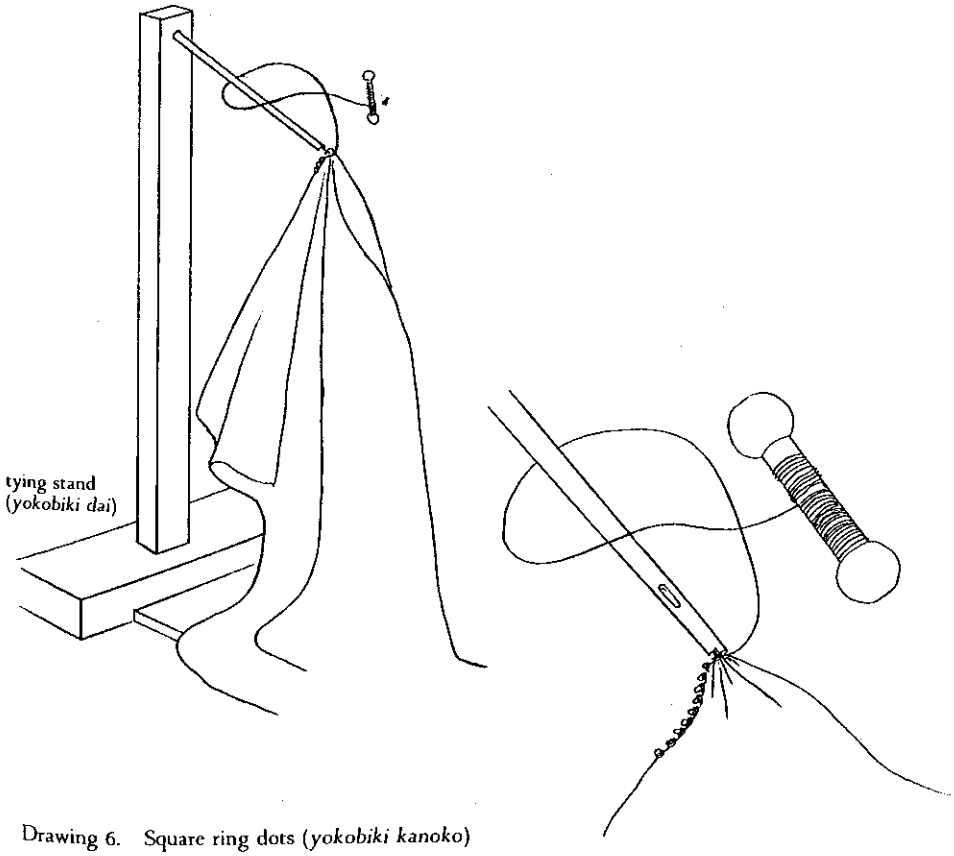


45. Square ring dots (*yokobiki kanoko*)

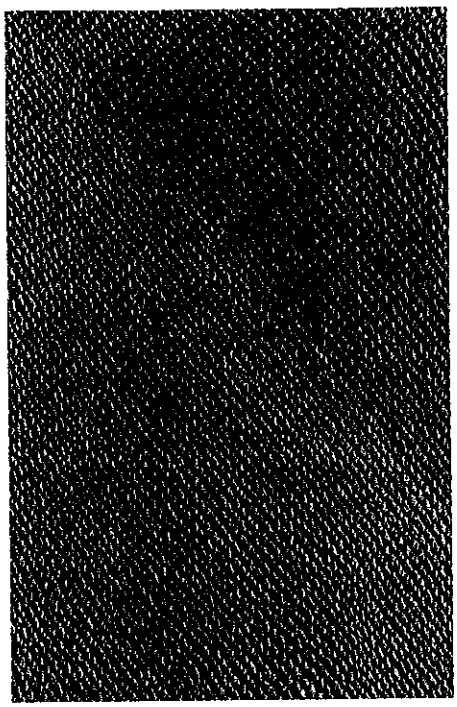
▪*Equipment, Cloth, and Thread:* A tying stand *(yokobiki dai)* is used. It has a metal arm fitted with a very fine hook, like a bent needle. The worker sits on the base of the stand facing the hook. A short bobbin with knob ends holds the thread.

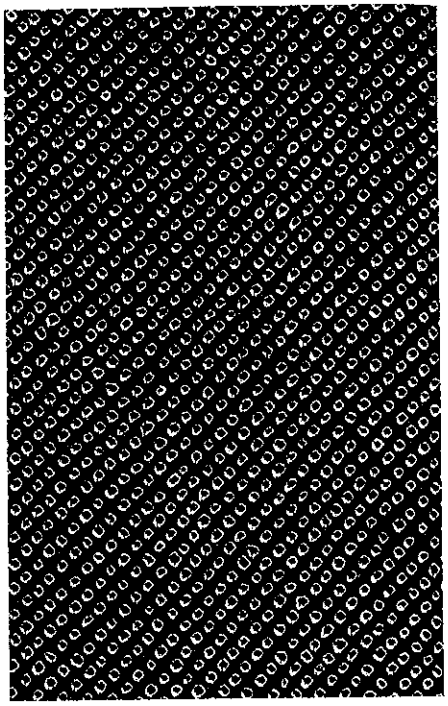
Drawing 6
Drawings 43, 44

The cloth is silk or cotton; the thread is cotton (20/4), which, being heavier than silk thread, creates the resisted ring with fewer bindings. The pattern of dots is stenciled on the silk.



Drawing 6. Square ring dots (*yokobiki kanoko*)





49, 50. Spaced dots (*tsukidashi kanoko*)

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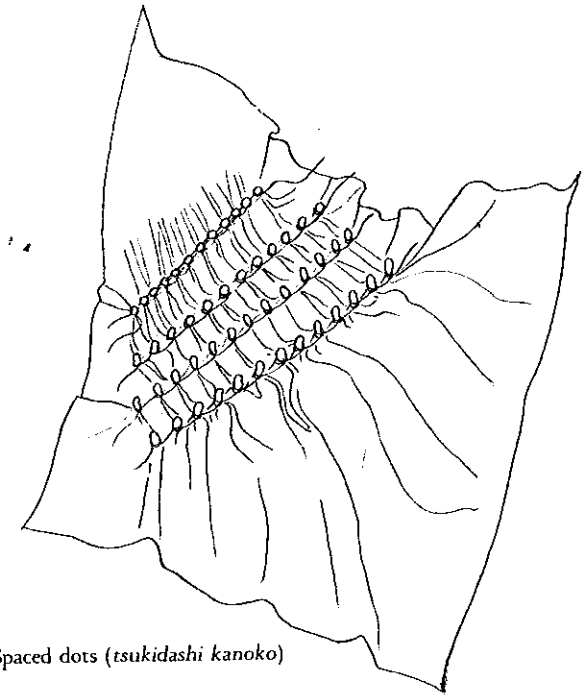


Drawing 7. Spaced dots (*tsukidashi kanoko*)

Silk cloth and mercerized cotton thread (numbers 40/3–50/3) are used in Japan. Cotton cloth may be bound in this way, but it will not retain a crinkled texture.

Drawing 7

▪*Shaping and Binding*: The cloth is held down over the needle with the left hand, and two turns of the thread are made. One or two *kamosage* knots (page 57) are used, depending on your skill. The cloth is raised free of the needle, the fingers are withdrawn from the loop, and the thread is tightened. This is tricky. As this is being done, the tip of the raised bit of cloth is gently held in place by the left index finger, which prevents the thread from slipping as the knot is tightened.

Stitching

CLOTH STITCHED AND GATHERED

Stitching as a way of resisting the dye has been used to a greater extent by the Japanese than by other peoples. They have found, through the flexibility and control that this technique allows, the means with which to create designs of great variety—delicate or bold, simple or complex, pictorial or abstract.

An extant example of a very refined stitch-resisted design on red silk—the lining of a sutra case—which Tetsurō Kitamura, in his book *Shibori*, dates from the Kamakura period (1185–1333), indicates that by the early fourteenth century the use of stitching in creating patterns in cloth with dye was well developed. Plate 5

In the Muromachi period (1333–1573), stitching came to be used as the means of reproducing stylized natural motifs *(e-moyō)* in cloth by means of dye. The design possibilities of stitched resist dyeing were extended still further when ways were devised to protect certain portions of cloth from the dye. Stitching delineated design motifs as well as large areas to be dyed or reserved. It was these developments in the use of stitching that made possible the multicolored garments and religious banners—*tsujigahana* textiles—of the late Muromachi and Momoyama periods. Extant examples of these precious textiles show how ingenious and imaginative the Japanese textile craftsmen were in the use of stitching to decorate cloth. They give ample evidence of the high level of development to which the Japanese carried resist dyeing during the fifteenth and sixteenth centuries.

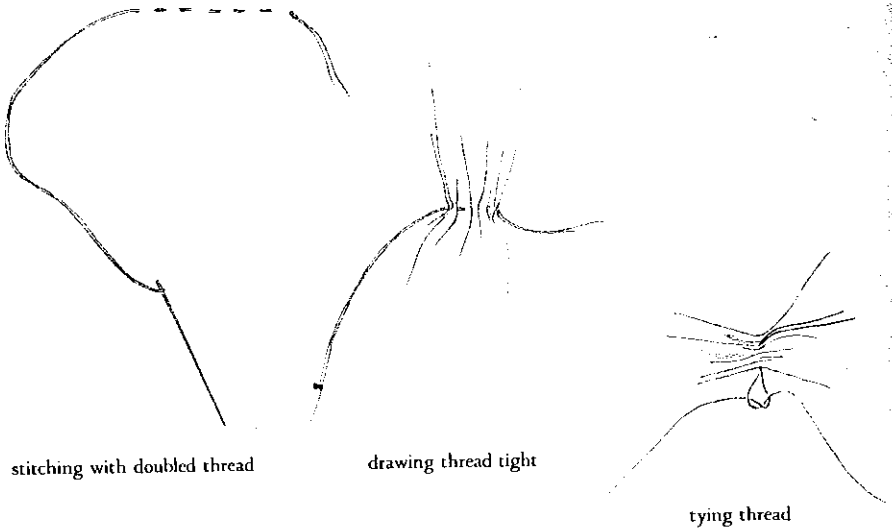
The unique effects possible with stitched shibori are created by the type of stitch, whether or not the cloth is folded, and the arrangement (straight, curved, parallel, area enclosing) of the stitches.

After the stitching of a piece is completed, the cloth is drawn into tight gathers along the stitched thread(s) and secured by knotting. It is then dyed. The cloth within the gathers is largely protected from the dye.

The principal stitch used in shibori is the simple running stitch. The stitching thread is inserted into the fabric with even spacing and stitch length and a constant forward movement.

The only other stitch used in Japanese shibori is a type of overstitch, which creates a distinctive pattern in the cloth after it is dyed. This stitch is always made over the edge of a fold of cloth. The stitching proceeds from right to left with a circular motion of the needle. The thread is not drawn up with each stitch, but the cloth is gathered on the needle; as the stitching continues, the gathered cloth is pushed back over the eye of the needle onto the thread.

In stitched shibori, the thread must be of a weight appropriate to the fabric and of a strength that allows it to be tied without breaking. Doubled thread can be easily tied after the stitching is completed and drawn tight.



Drawing 11.

SINGLE LAYER OF CLOTH

A single line of running stitches made in a single layer of cloth results in a broken line of resisted marks. The name for this type of stitching is *hira-nui* (or *shishige-nui*). This *hira-nui* stitching done in multiple parallel rows in a single layer of cloth creates a textural design effect known as wood grain *(mokume)* shibori.

Wood Grain (*mokume* shibori): The balance of light and dark in this design gives it a textural quality unusual in stitch-resist patterning. The resemblance of this pattern to wood grain is clear enough. The beauty of this type of stitch resist lies in the undulation of the dark lines as they join and break and join again.

Plate 56

This handsome textural effect has long been used in Japan. A Muromachi period example of the classical design of linked circles *(shippō-tsunagi)* is resisted in this way within the elliptical shapes made by the overlapped circles. An example from the Momoyama period shows it in a striking check design in which it is used alternately with blocks of solid color. In a beautiful kimono from the middle Edo period, it is used in certain of the ground areas, dyed in indigo on a brownish gold satin. This versatile type of stitch resist has also been used to create richly textured backgrounds for embroidered designs; to create patterns by filling the entire ground with stitching, leaving only the design areas unfilled (Plate 139; see Plate 105 for a delicate effect with *hon hitta kanoko*); and to create designs with the stitching confined to selected elements of the design.

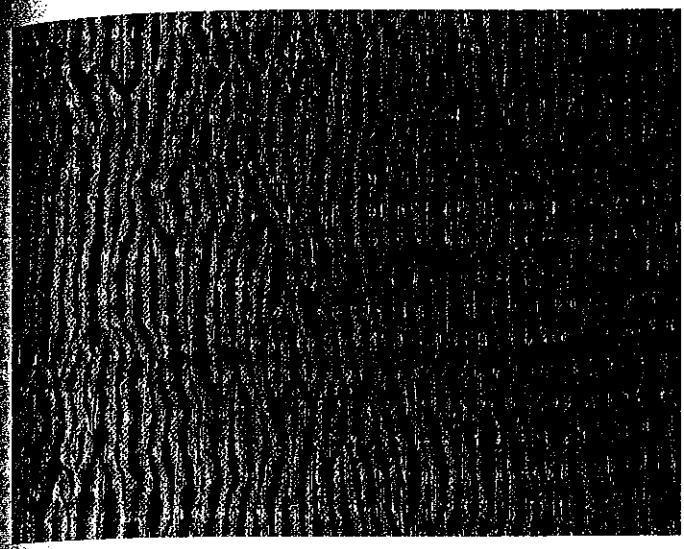
Plate 7

Plates 139, 105

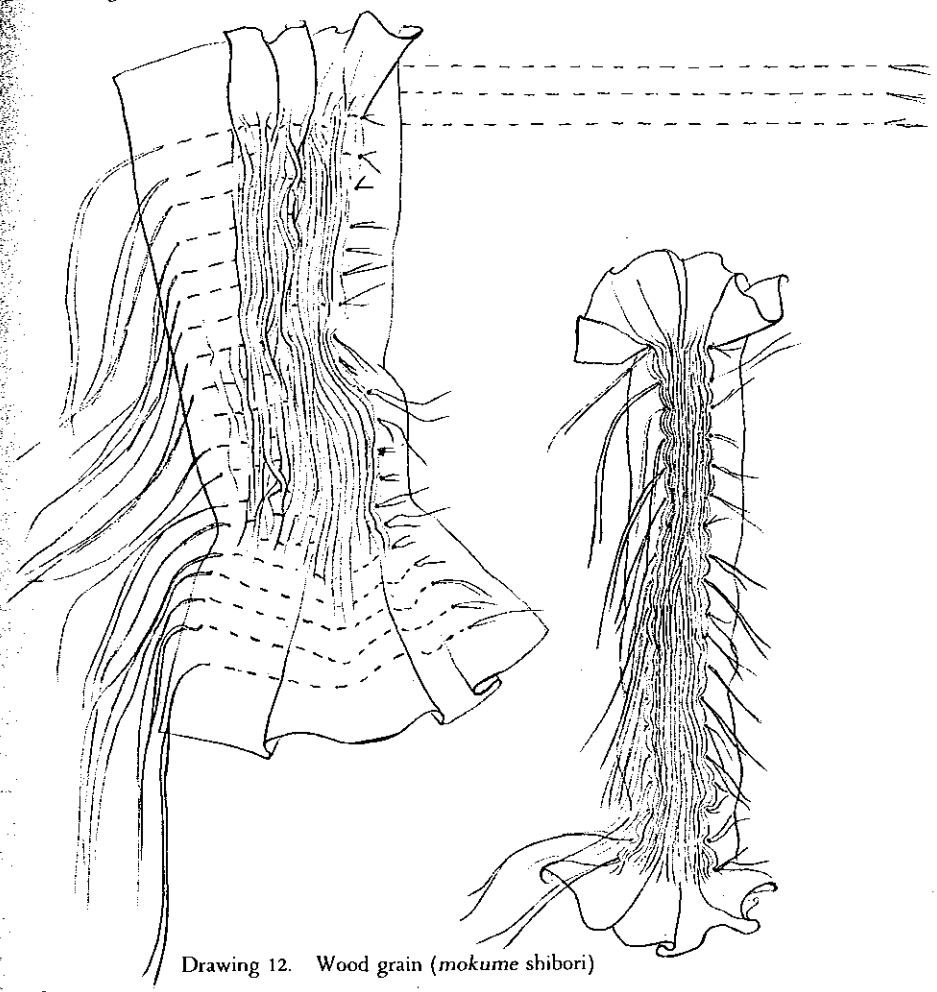
Different effects are obtained by varying the direction and length of the stitches. One of these variations seen in Arimatsu shibori achieves a herringbone effect by stitching parallel zigzag lines.

Drawing 12

▪*Stitching and Gathering*: Traditionally, the stitching is done parallel to the weft because this allows a shorter thread length, but the stitching may, in fact, be done in any direction; and as long as the repeated rows are parallel to each other, the wood-grain patterning results. The length of the stitches may be the same throughout (traditional),



56. Wood grain (*mokume* shibori)



Drawing 12. Wood grain (*mokume* shibori)

or they may vary in length from row to row. No attempt should be made to rigidly align the individual running stitches with those in other rows; the stitched cloth in Drawing 12, shown with the threads partially drawn up, reveals the discontinuous folds that occur when the stitches are not aligned. These irregular folds create the undulating lines with occasional breaks in them. After the stitching is completed, each thread is drawn up and knotted and the cloth is dyed.

FOLDED CLOTH

The result of stitching through a fold of cloth can best be understood by folding a strip of paper in half lengthwise, making accordion pleats across the folded strip, and, with these folds held compressed, coloring the edges on both sides. When the paper is opened flat, it can be seen that the center fold bisects the design and reverses the arrangement of dark and light—a black line on one side of the center fold will be matched by white on the other.

A single line of running stitches made parallel and close to the edge of a fold results in a line composed of two rows of resisted marks, one row on each side of the fold and alternating as described. This stitching and linear design is called *ori-nui*.

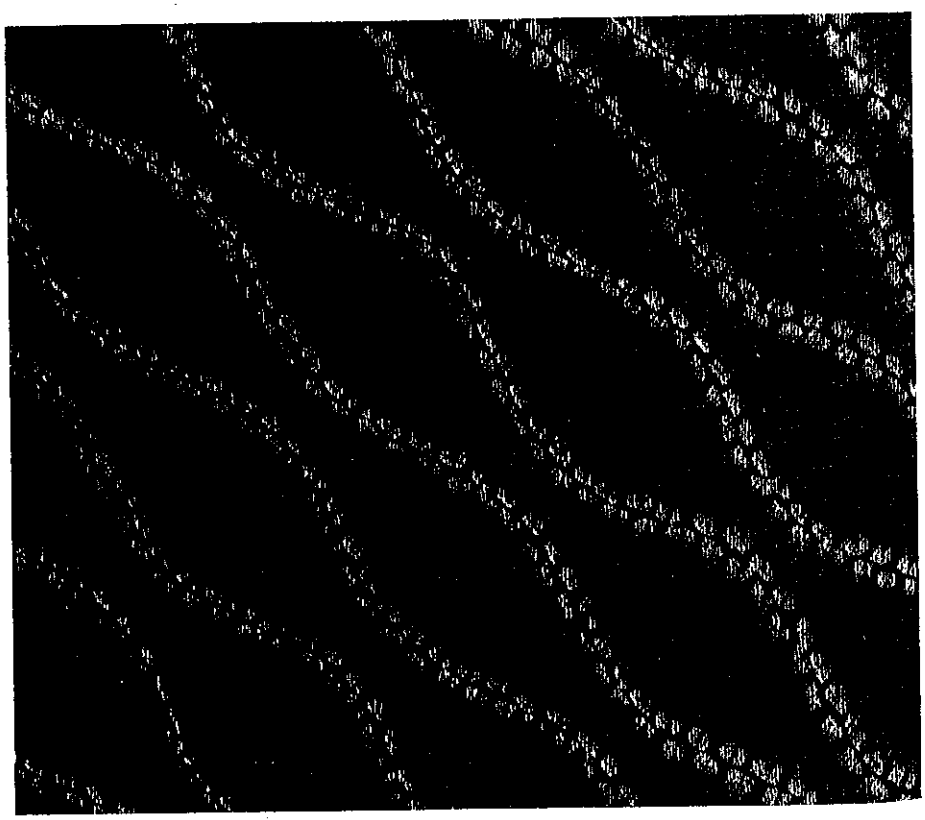
A single line of running stitches made through two layers of cloth along but not parallel to the fold results in a design that is symmetrical along the axis of the fold. Multiple rows (straight or curved) of running stitches made parallel to each other, but not parallel to the fold create patterns that are symmetrical, but display the reversing effect of the fold. In Arimatsu the name for this way of stitching is *hishaki-nui*.

The overstitch, described above, creates a chevronlike stripe, because the fold in the cloth repeats the diagonal slant of the stitch. The stitch is called *maki-nui*.

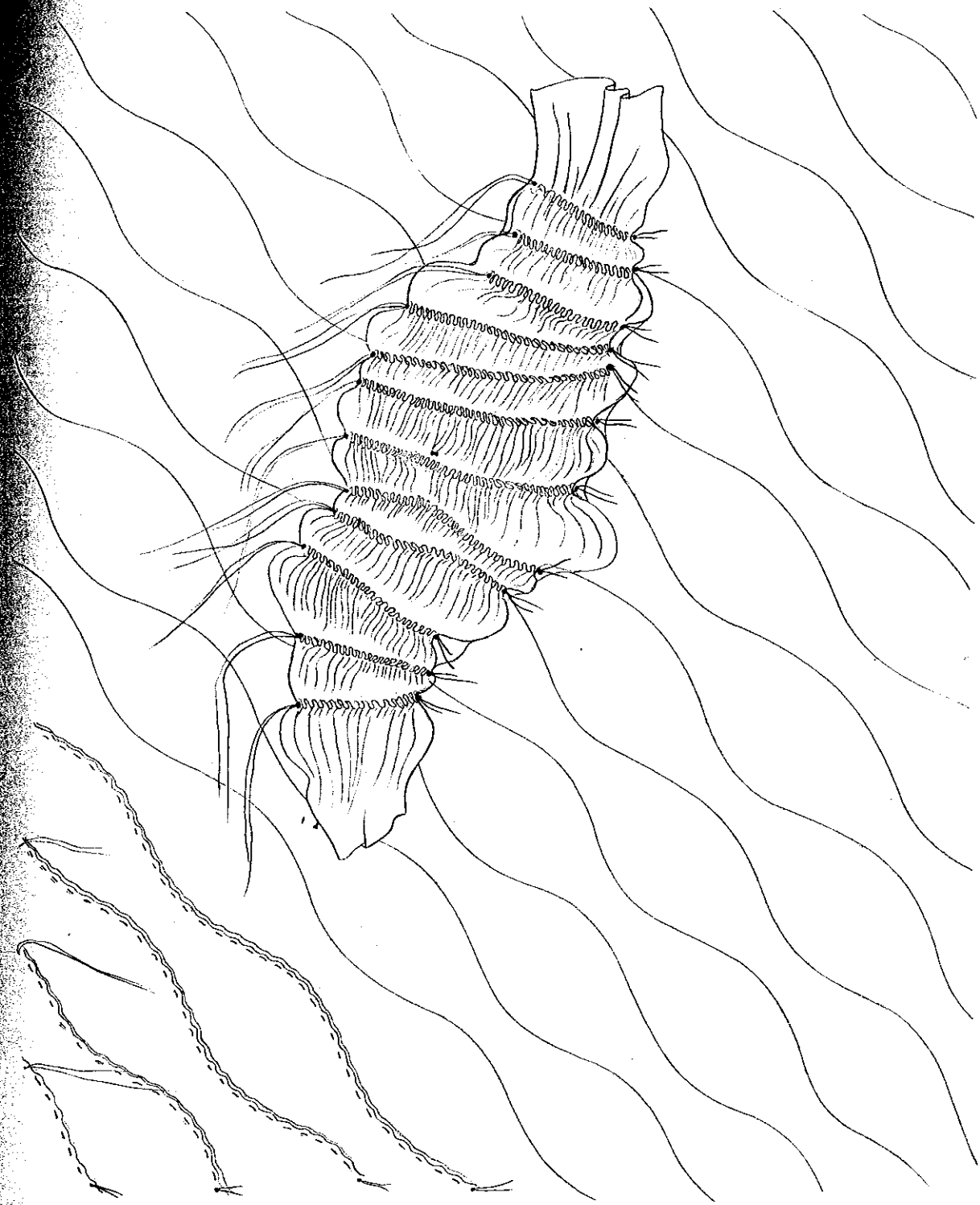
Plate 57

Ori-nui Shibori, undulating lines (*tatewaku* pattern): This ancient design, of which the piece illustrated is a folk shibori example, appears in woven textiles and lacquerware of the Heian period (794–1185). It can be executed in various types of shibori, such as *kanoko*, *maki-nui*, and *ori-nui*. This design became popular during the Edo period (1615–1868), and during that time a shibori adaptation of it appeared in the folk textiles of Arimatsu.

In this shibori example, the undulating lines of the *tatewaku* pattern run diagonally, whereas the traditional arrangement of the lines is vertical. In textile weaving, the vertical placement of the undulating lines relates to the necessity of building the design



57. *Ori-nui* shibori, undulating line (*tatewaku*) pattern



Drawing 13. *Ori-nui* shibori; undulating line (*tatewaku*) pattern

on the warp threads—*tate* means "warp" as well as "vertical." In shibori, the diagonal alignment of the lines reflects the technical convenience of limiting the length of the thread used to stitch each line of the design. Although it results from a technical consideration, this diagonal alignment enhances the flowing movement of the pattern while preserving the effect of lightness and suppleness. In a garment, this flowing design creates a vibrant effect as the pattern moves and shifts with the movements of the body. Plates 322, 323

Drawing 13 ▪*Stitching and Gathering*: The *ori-nui* technique is as follows: cloth is pinched with the fingers along the lines of the design marked on the cloth. A single row of running stitches is made close to the edge of the fold, which is pinched as the stitching progresses. When all the stitching is completed, the threads are drawn up tight and knotted and the cloth is dyed.

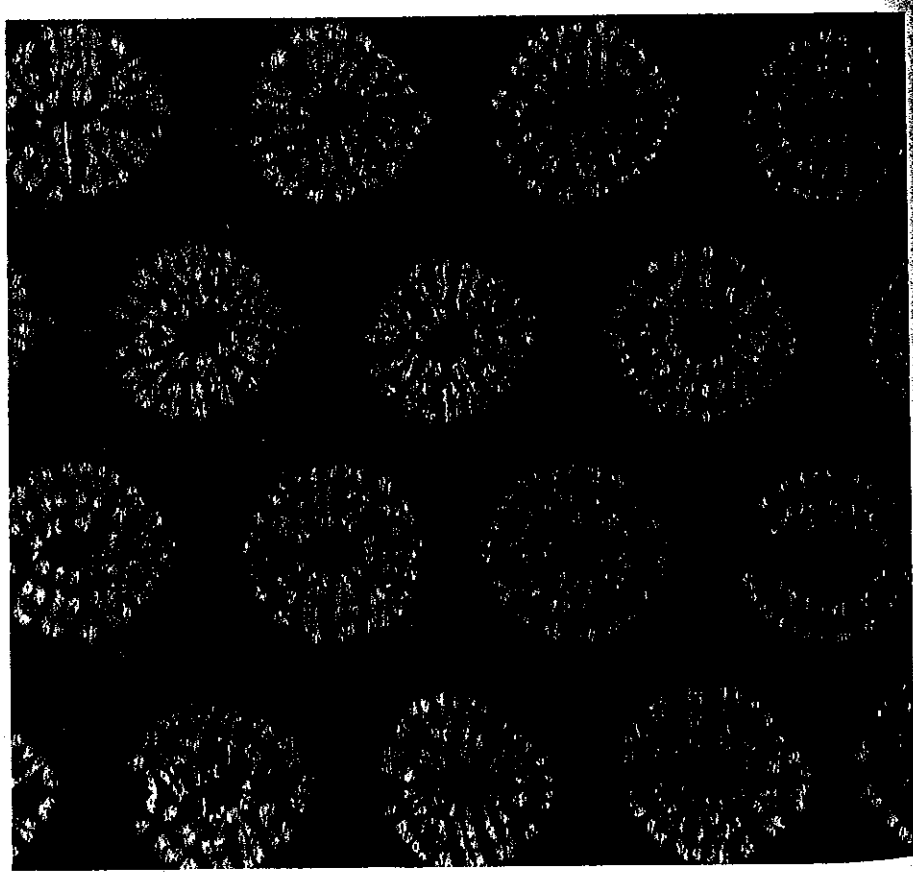
Plates 5, 58 **Japanese Larch** (*karamatsu* shibori): The dark radiating lines within this design's circular shape evoke the form of the radiating branches of this deciduous conifer native to Japan. Once a popular design of the Nagoya area, it is now seldom seen. The way the lines break and join shows a relationship to the breaking and joining of the vertical lines in wood-grain shibori. The irregularity of the dark radiating lines within each circle adds variety to the pattern.

▪*Stitching and Gathering*: Concentric half-circles are marked on the cloth at the fold. The units are in staggered rows. A continuous thread is used to stitch each row of half-circles. Running stitches are made through the two layers of cloth in the fold. When all the stitching is completed, the threads are drawn up tight and knotted. When the cloth is opened flat after dyeing, the rows of full circles are revealed.

A shibori design is often quite sensitive to even seemingly slight changes in how the fabric is manipulated. For example, when the circular motifs are stitched singly instead of in rows with a continuous thread, the resist effect of the knots necessary for each unit is evident as well as a dark band running through the center of each motif, where the fold is. Both effects may be consciously used as design elements. The kimono by the late Motohiko Katano in Plate 328 is illustrative. In Kyoto, these individually stitched units are used alone or in small groups and are called *miru* shibori (sometimes they are diamond shaped), and they may be combined with other shibori effects.

Plate 328

Plates 147, 148, 150



58. Japanese larch (*karamatsu* shibori)

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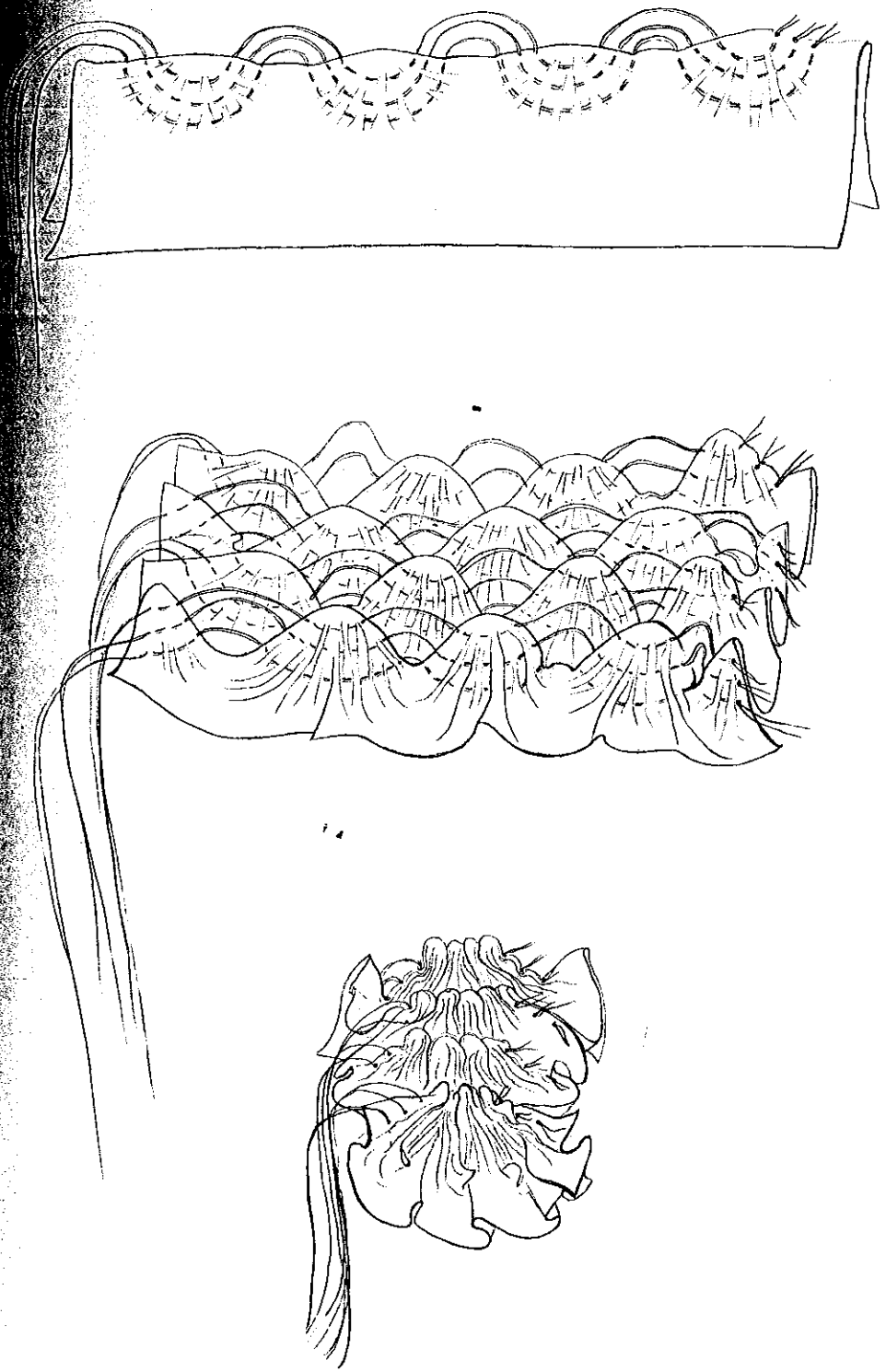


Drawing 14. Japanese larch (*karamatsu* shibori)

Linked Circles (*shippō-tsunagi* pattern): This classical design appeared as a textile motif in Japan at least as early as the Nara period (645–794); a shibori example decorated with this pattern is in the Shōsō-in collection. The design, composed of interlocking circles of equal diameter and forming elliptical shapes where the circles overlap, would appear to have been suggested by an old form of Chinese coin. The name for the design, *shippō* (in Japanese), translates as "seven treasures" and is Chinese in origin. *Tsunagi* means "link."

Plate 2

Plate 59

The example illustrated is ingeniously made by stitching along the edge of two adjacent arc-shaped folds of cloth that have been drawn together. Stitching two folded edges together in this manner is known as *awase-nui* and is a variation of *ori-nui* shibori. The elliptical shapes formed by two arcs are also used to suggest the leaves of bamboo or are grouped together to suggest flowers.

Drawing 15

In one type of shibori, the areas within the stitch-resisted outlines are completely resisted. This is done by pasting thin paper to the underside of the cloth before it is folded and stitched. This is possible because a "pocket" is formed when the folded lips of the elliptical shape are stitched together. The paper pasted on the back of the pocket stops the dye from penetrating into the area within the stitched lips. This technique is used with indigo and is known as *kamiate* shibori, *kami* meaning "paper," and *ate*, "to apply."

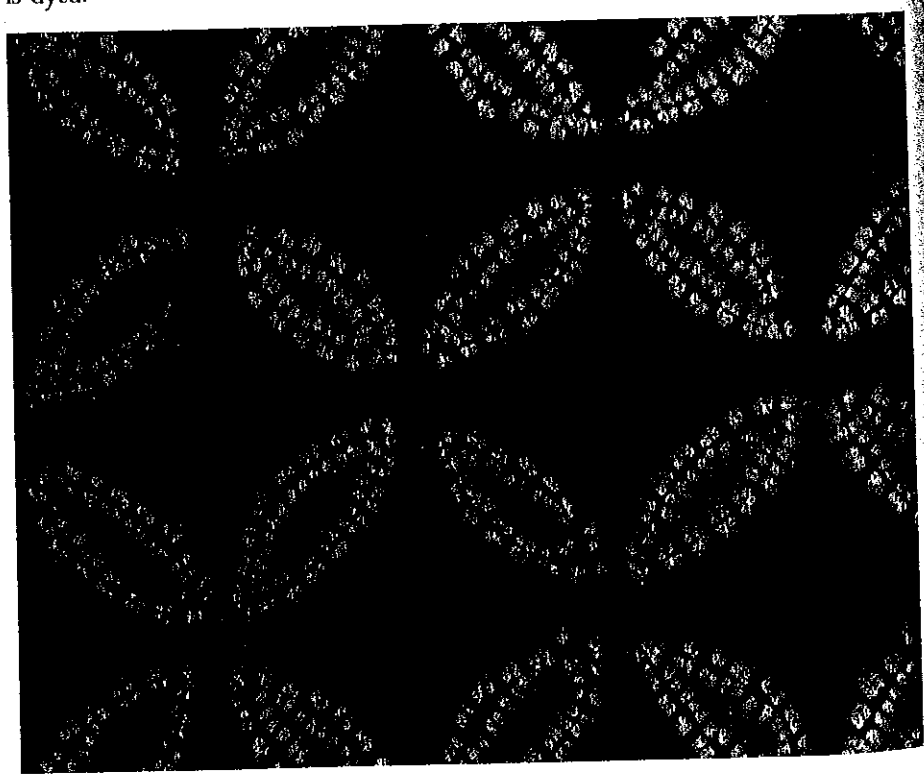
Plate 153

Drawings 15, 16

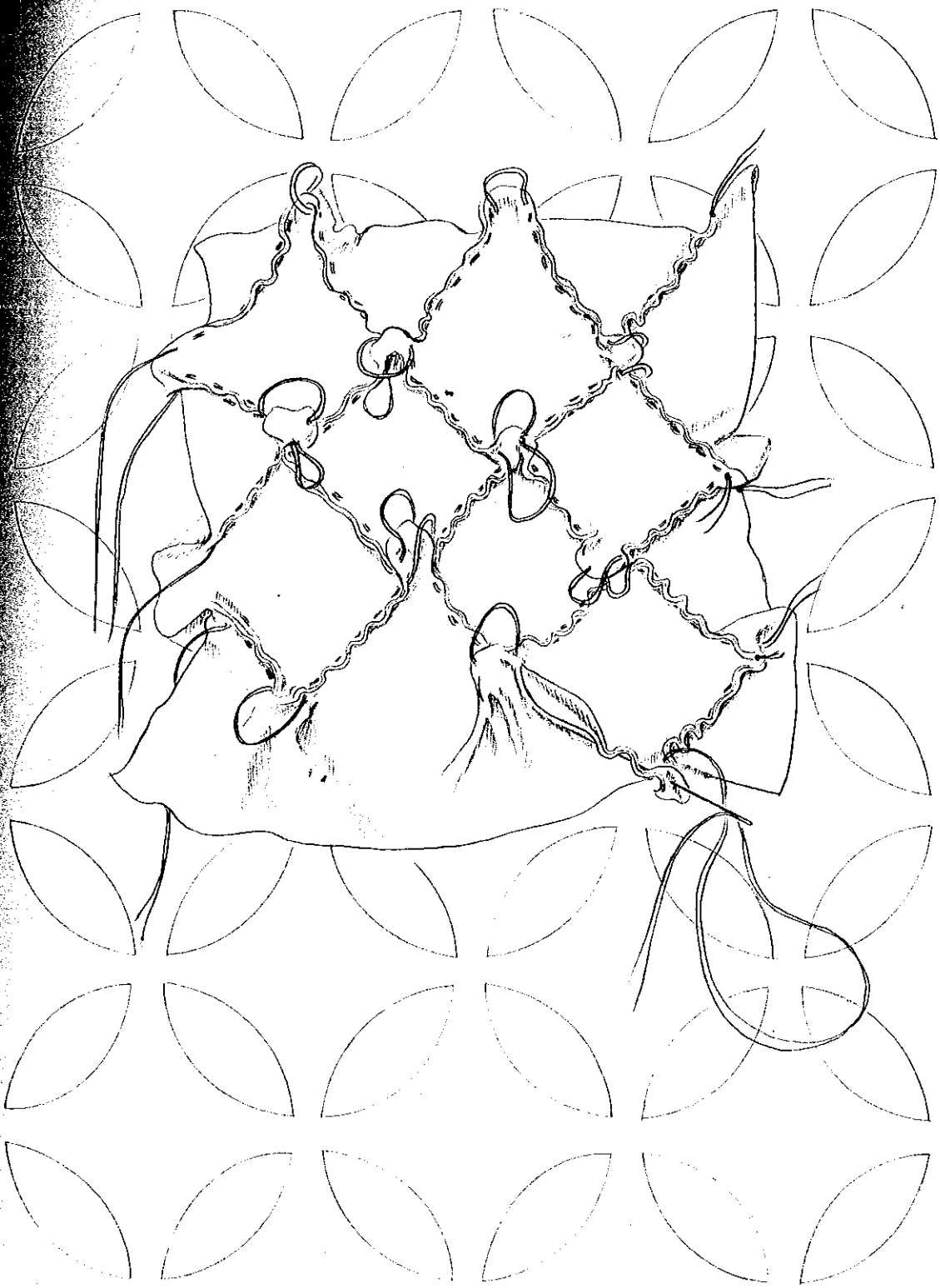
▪*Stitching and Gathering*: The design marked on the cloth indicates the way the cloth is folded before it is stitched. A fold is made along the line of each arc. This fold is matched to the arc adjacent, and a second fold is made, forming two "lips" to the ellipse. The two folds are brought together and held pinched between the thumb and first finger, while the ends of the folds are carefully pinched to meet in points.

Running stitches are made close to the edge of the two folds through four layers of cloth, and one row of designs is stitched continuously across the width of the cloth.

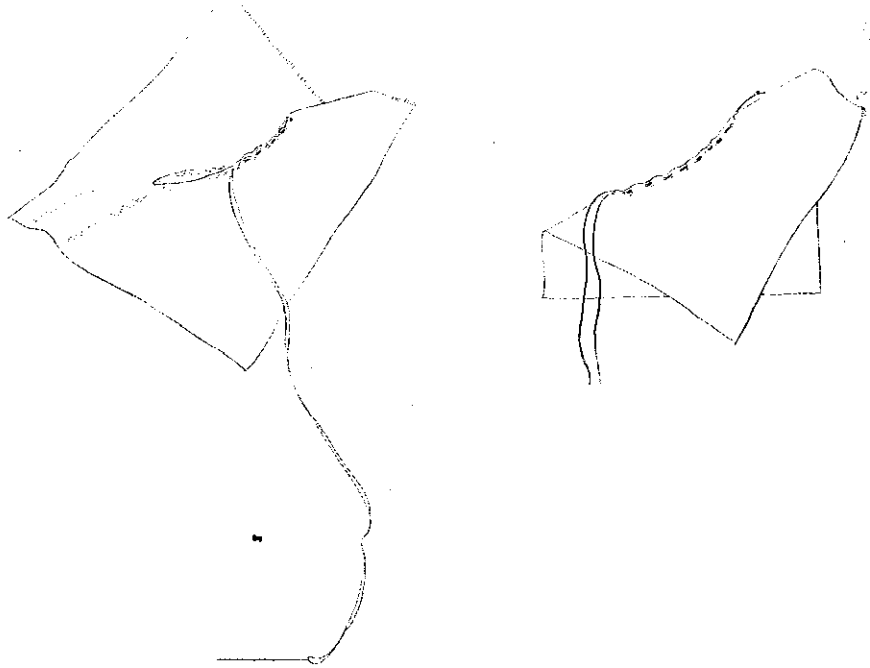
When the stitching is completed, the threads are drawn up and secured and the cloth is dyed.



59. *Awase-nui* shibori, linked circle (*shippō-tsunagi*) pattern



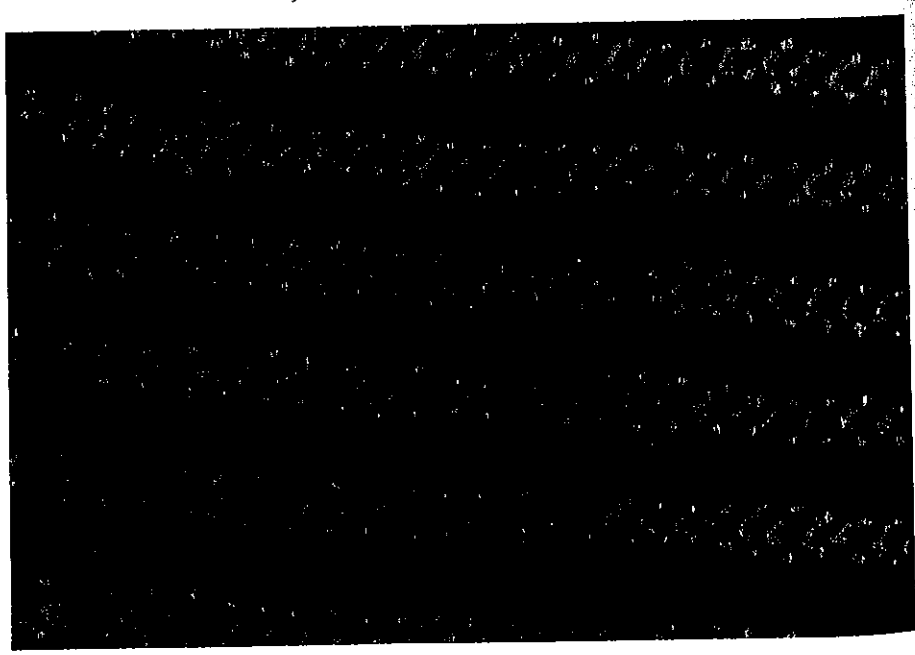
Drawing 15. *Awase-nui* stitching, linked circles (*shippō-tsunagi*) pattern



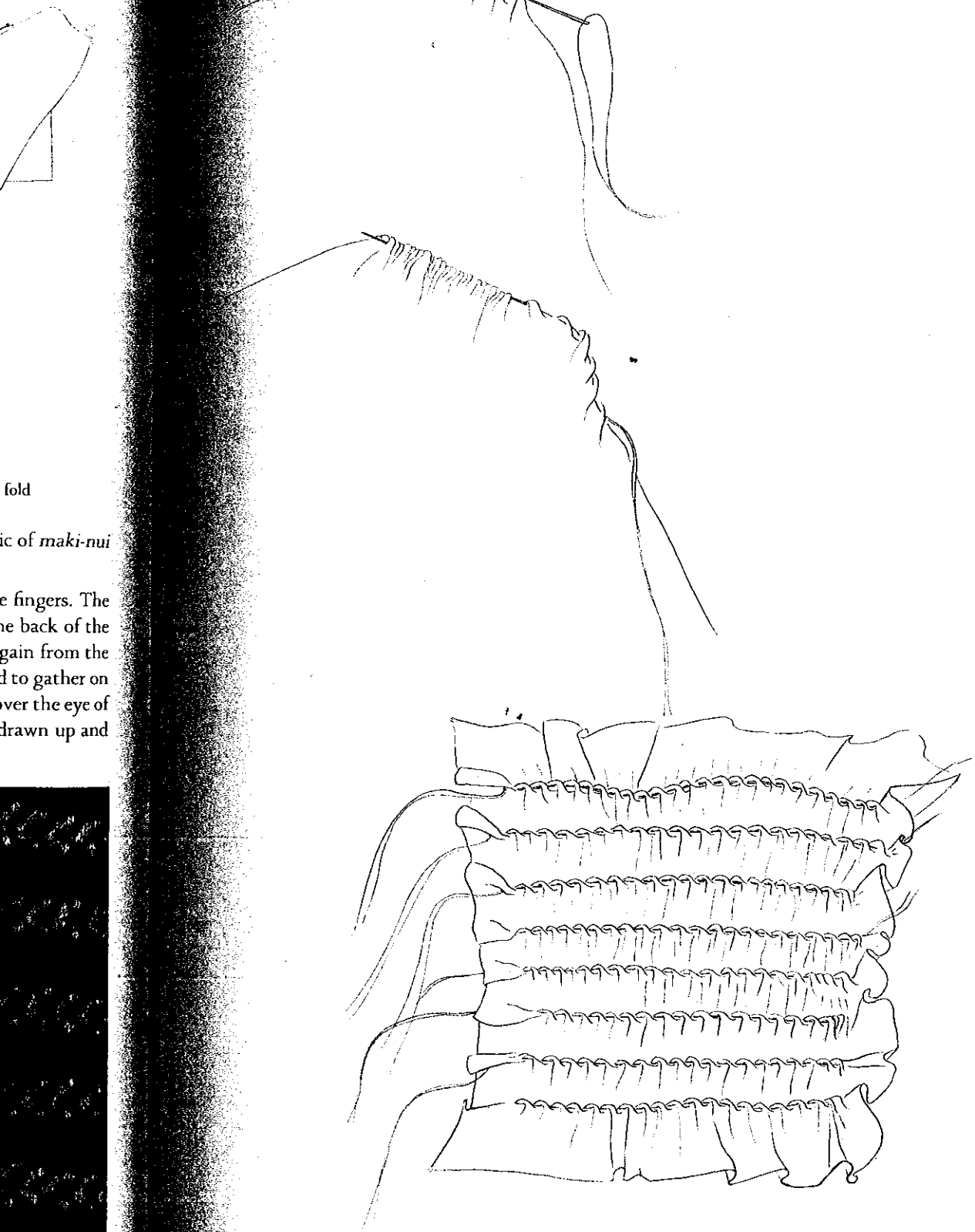
Drawing 16. *Awase-nui*: stitching together the lips of an arc-shaped fold

Plate 60 **Chevron Stripes (*maki-nui* shibori):** The lines of chevrons characteristic of *maki-nui* shibori are used here to create a pattern of horizontal stripes.

Drawing 17 ▪*Stitching and Gathering*: The cloth is held on the fold line with the fingers. The stitching is done with a circular motion of the needle; it is inserted at the back of the fold, and the point is brought over the edge of the fold and is inserted again from the back. The thread is not drawn up with each stitch, but the cloth is allowed to gather on the needle, and, as the stitching progresses, the gathered cloth is pushed over the eye of the needle onto the thread. After the stitching is finished, the thread is drawn up and knotted and the cloth is dyed.



60. Chevron stripes (*maki-nui* shibori)



Drawing 17. Chevron stripes (*maki-nui* shibori)

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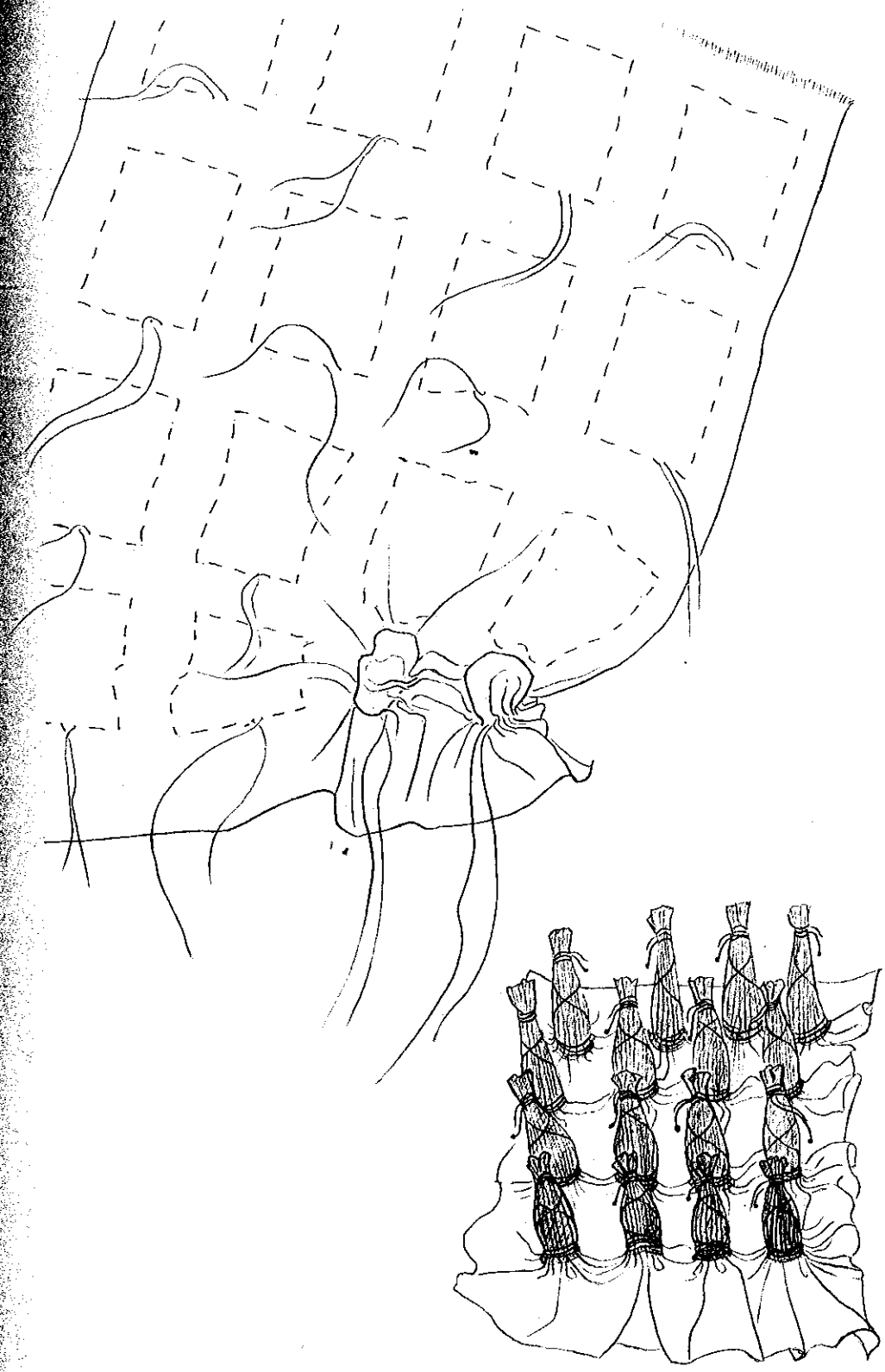


Drawing 23. Small capped motifs (*kobōshi* or *kawamaki*), squares

Folding

CLOTH PLEATED AND BOUND

Binding and dyeing lengths of pleated cloth is a resist method used in Japan for at least three hundred years. Early records at Arimatsu tell of a gift of silk horse reins, decorated in this way, that was presented in 1680 to the fifth Tokugawa shogun by the daimyo of Owari, the feudal lord of the fief that included Arimatsu. The design of this important gift, a combination of vertical stripes and horizontal bands, has been called *tazuna*, "horse rein," shibori ever since and, on occasion, is still made in Arimatsu.

Vertical stripes are made by the simple process of pleating the cloth along the warp, then binding the pleated cloth either by itself or around a core. The size of the pleats is dictated by the design effect desired. Since only the edge of each pleat is exposed when the cloth is bound and dyed, a pattern of stripes results. The resisting effect of the binding thread results in fine resist lines crossing the dark stripes, adding interest and variety to very simple patterns.

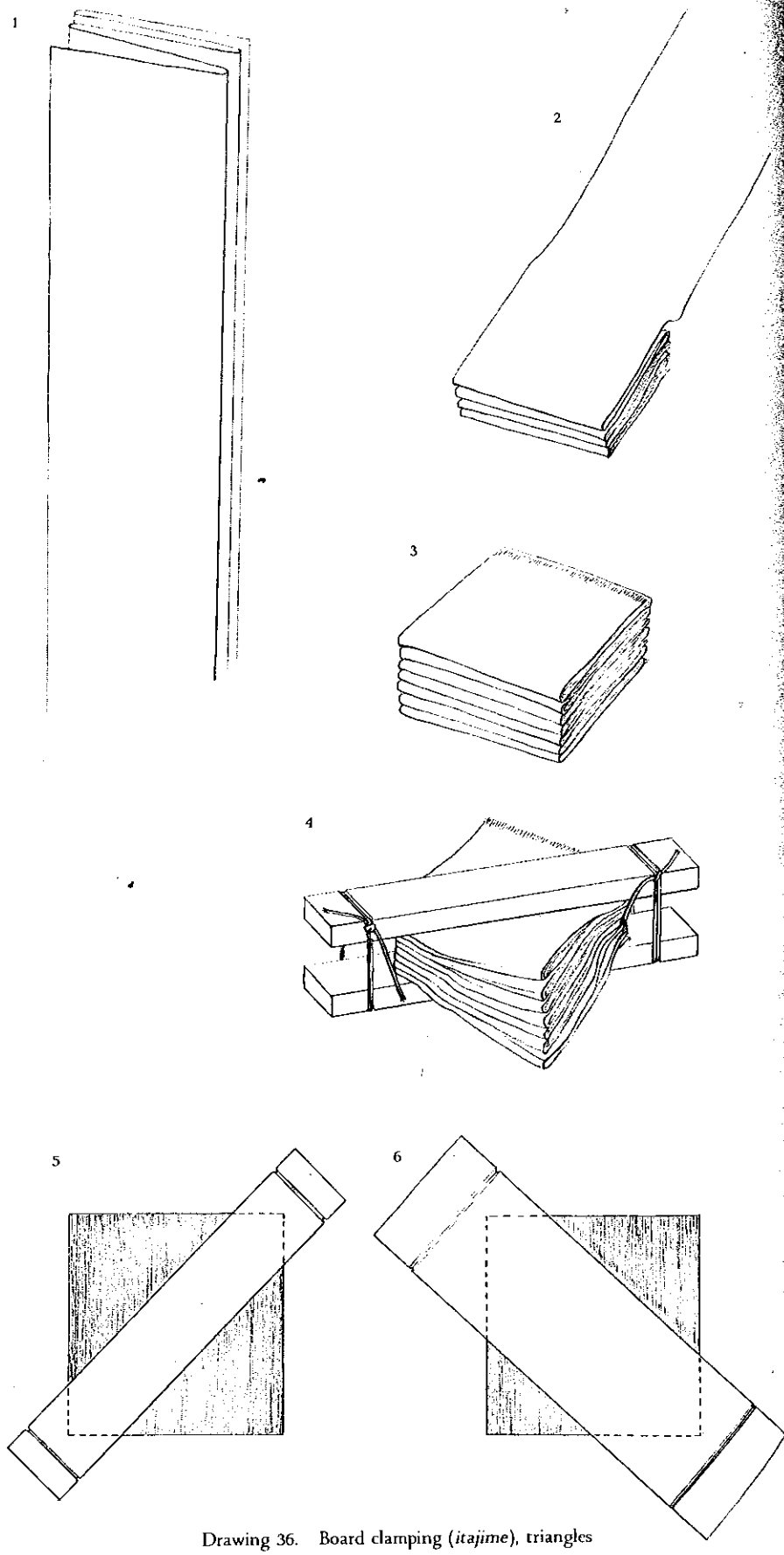
The Japanese have devised ingenious ways of manipulating cloth when it is pleated to create designs other than stripes. By covering sections of the pleated cloth with paper or strips of cloth before it is bound, by pleating and dyeing the cloth more than once, and by binding the pleated cloth on a flexible core, the design possibilities of this relatively simple resist process have been increased. The pleating types discussed below provide means of exploiting the possibilities of folding and binding cloth to create designs.

CONTINUOUS PLEATING

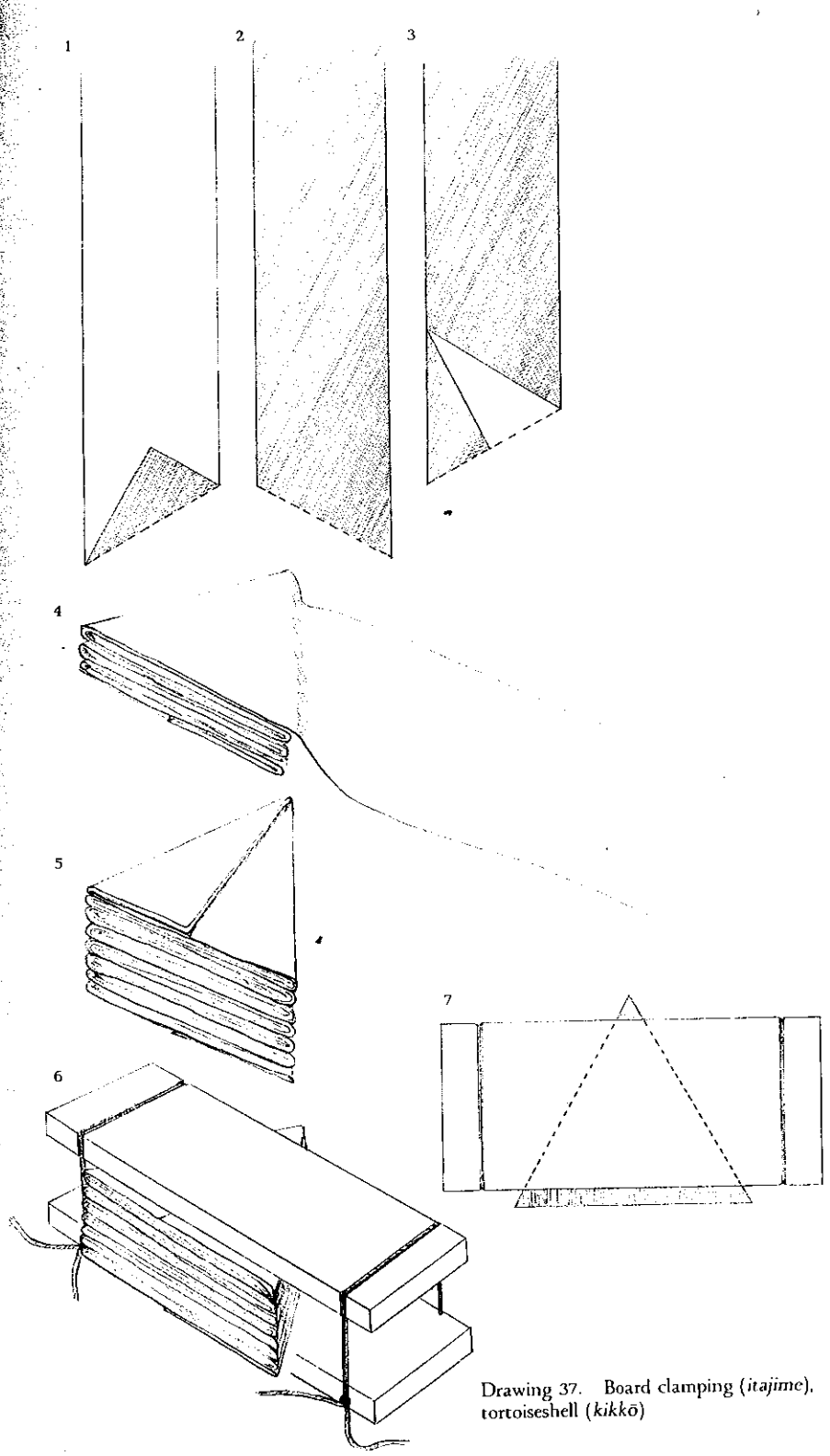
Forming the cloth into continuous pleats—by hand, machine, or stitching—then binding it results in simple designs of vertical stripes. Repeating the process, folding the cloth differently each time, adds variety, depth, and subtlety to the patterns.

If the cloth is pleated continuously in the regular way but is bound intermittently, patterns of vertical stripes and plain horizontal bands result. To create yet another effect, plain bands may be resisted by covering portions of the pleated cloth with paper before it is bound.

The cloth is folded into uniform vertical pleats, the folds of which are extended a few centimeters at a time. The first pleated length is held together with thread, and the thread is wound around it as the pleating progresses. This thread *(kake-ito)* is not wound with enough tension or at close enough intervals (the turns of the thread are about 4 cm/1½ in apart) to bind the cloth; it merely holds the pleats together in a ropelike shape. The cloth is then bound when all of it is pleated and secured in this way.



Drawing 36. Board clamping (*itajime*), triangles



Drawing 37. Board clamping (*itajime*), tortoiseshell (*kikkō*)

Lattice (*naname gōshi* pattern): The interplay of horizontal, vertical, and diagonal lines creates a strong patterning of dark and light. The triangular structure is obvious. Plate 80

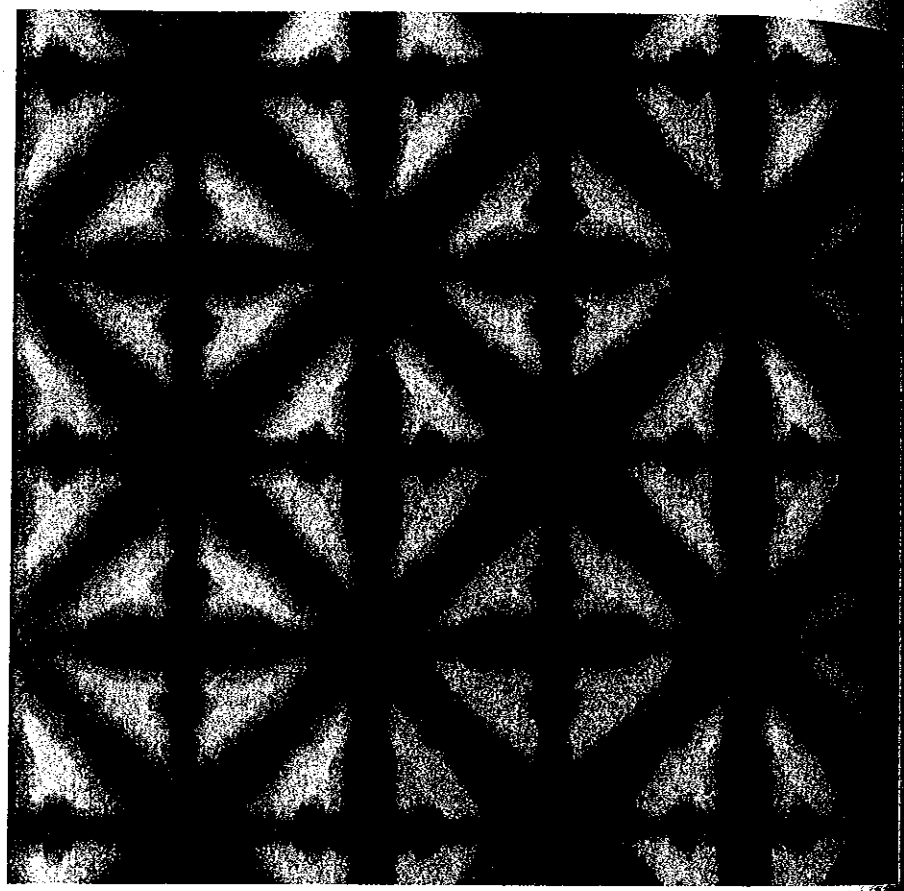
▪*Folding and Clamping:* The cloth is folded lengthwise into four accordion pleats. To establish the triangular form, one diagonal fold is made in the pleated cloth strip, aligning the bottom edge of the cloth with the left-hand edge. The cloth is turned over Drawing 38

Drawing 38

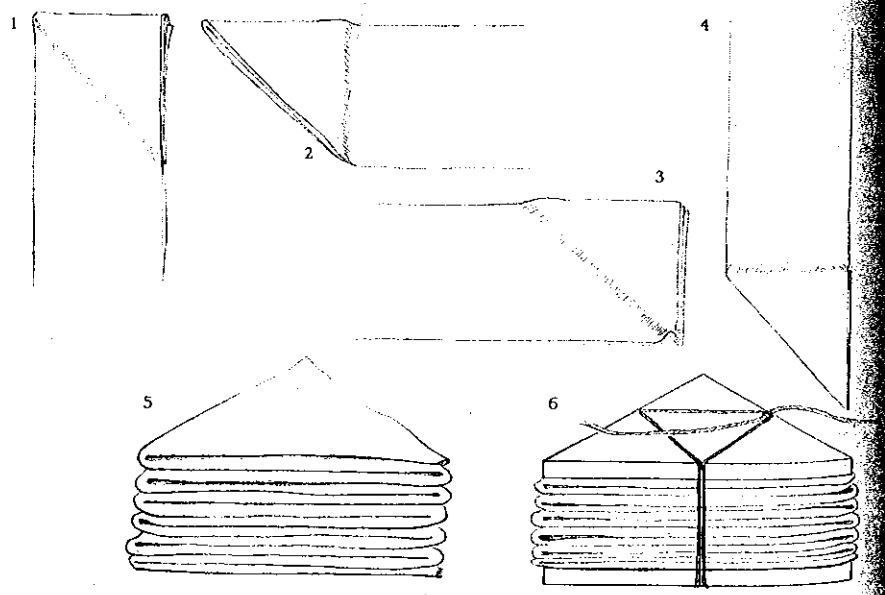
and remains with this first fold facing the work surface. All subsequent folds are made moving the strip of cloth in the order shown in Drawing 38.

When all the cloth is folded into a neat stack, triangular boards the same size as the cloth or slightly smaller are put in place and secured with cord.

Each of the three sides of the stacked cloth is dipped in the dye.



80. Board clamping (*itajime*), lattice



Drawing 38. Board clamping (*itajime*), lattice

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Pole-Wrapping

CLOTH POLE-WRAPPED AND COMPRESSED

Arashi, "storm," is the name the Japanese have given patterns resist-dyed by an ingenious process of wrapping cloth around a pole, compressing it into folds, and dyeing it. Indeed, many of the diagonal patterns suggest rain driven by a strong wind. The particular quality and subtlety of the patterns are fully revealed only in a length of cloth. Small samples are insufficient. These patterns are by no means haphazardly achieved, but not even the most skillful worker has complete control over the process, making slight irregularities of pattern inevitable. To be sure, if complete control were possible, the results could hardly be called *arashi*, for it is precisely the irregularities, like those in the changing patterns of wind-driven rain, that give these fabrics their special beauty.

This unusual process was invented in 1880 by Kanezō Suzuki in Arimatsu expressly for the production of indigo-dyed cotton. Today cloth is no longer dyed on 4-meter-long (about 13-ft) wooden poles in special troughlike vats, as was done in the original process. However, cotton and silk dyed with chemical dyes are now produced in Arimatsu using an adaptation of the process—one that changes the design effect somewhat. It, too, is likely to die out there—only one man, Reiichi Suzuki, working with his wife, produces *tatsumaki arashi*, and when this book was being written, he had no successor.

Recently several American textile artists have made a successful adaptation of the original process. A short length of plastic pipe is substituted for the long wooden pole, making it possible for one person to rotate it manually while controling the thread winding—the original process required two workers—and to dye the cloth on the plastic cylinder in either an ordinary indigo vat or a hot dye bath.

Original Process: Following its invention in 1880 (Meiji 12), five years were spent perfecting the process. By the late Meiji period, *arashi*-patterned cloth had gained great popularity. During its relatively short history, more than one hundred different patterns were created.

While shibori is traditionally, although not exclusively, done by women working in their homes, *arashi* shibori was always produced by men in small workshops, where there was space to accommodate the large dye vats and the stands to wind the long poles. At the peak period of production, there were fourteen producers in the Nagoya area, each using from thirty to one hundred fifty poles. Each pole held four lengths of kimono cloth (approximately 44 m/144 ft), so that it is easy to estimate that thousands of meters were produced.

The term *bōmaki*, literally "pole-wound," is used in shibori to describe any process in which a pole is used as a core to protect one side of the cloth from the dye. Although it is descriptive of the process used in *arashi* shibori, it is also correctly applied to rigid core shibori (*shirokage*; pages 97ff) and cloth shaped around a pole (*mura kumo*; see below, page 137). It is a general term, not a specific name for one process.

Drawing 45

In the original *arashi* process, the cloth is wrapped around a slightly tapered wooden pole set in a horizontal position in a device that allows the pole to be rotated with a hand-turned crank or small motor. Thread is then wound on the cloth-covered pole. One worker, the *arashi* craftsman, controls the thread as it winds onto the rotating pole, which is rotated by his assistant. Together, the two workers periodically push the thread-wound cloth along the pole into compressed folds. The slight taper of the pole makes this easier. When the pole can hold no more cloth, it is removed from the supporting beams and immersed in troughlike indigo vats. To dip the heavy poles into the dye bath required at least two workers. The high cost of labor and indigo, the introduction of chemical dyes, and competition from machine-printed cloth finally made the original process of dyeing on a long pole obsolete.

Japanese Adaptation *(tatsūmaki arashi)*: The process presently being used in Arimatsu to produce a very limited quantity of silk and cotton involves wrapping and compressing the cloth folds on the pole, but instead of dyeing it on the pole, cloth is brushed with sizing, dried, removed from the pole, fastened around a rope that serves as a core, and bound to it using the same process *(tatsumaki)* that is used in pleated shibori (see pages 105ff). The coil of cloth-covered rope fits easily in conventional dye pots. *Arashi* patterns dyed in this way are limited to those in which the cloth becomes sufficiently constricted to fit around a rope.

Plates 90, 271–74

Tatsumaki arashi fabrics are distinguished from those dyed on the pole or plastic cylinder by a pattern of very fine resisted lines running diagonally on the cloth. These lines result from the resist effect of the binding thread on the compressed folds of the cloth when it is bound to the rope.

Plates 293–300

American Adaptation: The plastic cylinders used in this latest adaptation are either lightweight drainage pipe obtained from suppliers of building materials or plastic plumbing pipe; the latter is heavier and more expensive but is more durable. It does not crack if dropped or become distorted when repeatedly subjected to the heat required in some types of dyeing. The drainage pipe in various diameters is available in 12-foot lengths and is easily cut with a hacksaw. Lengths of 3 to 5 feet are convenient to handle.

Cloth is wrapped around the plastic cylinder and held in place temporarily with masking tape. To wind the thread, the cylinder is held in an almost vertical position with one end resting on the floor. It is held at the top and rotated with the left hand, while the right hand controls thread tension and placement.

Unlike the pole used in the original process, the cylinder is not tapered, making it somewhat difficult to push the cloth along it. This is overcome by winding the thread over a small portion of the wrapped cloth at a time and then pushing the cloth into folds. To compress the cloth, the cylinder is grasped with both hands, and, with the top braced against a wall or fixed object, the cloth is pushed towards the top of the cylinder. The steps are repeated until all the cloth is in tightly compressed folds. The thread is securely fastened, and the cloth is ready to be dyed. The cylinder may be set upright in an indigo vat or in a heated dye pot.

BASIC PROCESS

Arashi shibori patterns may be divided into two general types: those composed of lines and those of small, diamondlike forms. Innumerable variations and combinations are possible. Each one of the four steps of the process—wrapping the cloth; winding the

thread; compressing the cloth; and dyeing—may be carried out in different ways. Each change affects the final design. The four-step process may be repeated once or several times. Each time it is repeated, additions are introduced or the design is subtlely altered.

This process is tricky at first. More detailed directions for the dyer are given in the Appendix, page 288.

Drawing 39.1

Plate 83

Plate 82

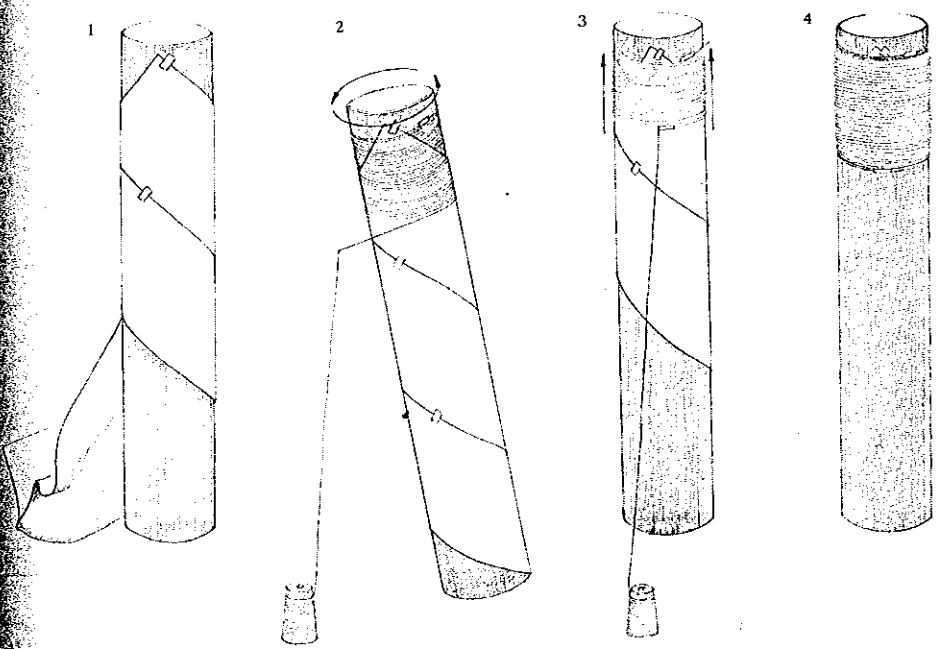
Plate 81

Drawing 41

Plate 87

■*Step One—Wrapping the cloth around the cylinder*: Cloth wrapped around the cylinder with the selvages or edges (the fabric may be cut to fit the cylinder) parallel along the length of the cylinder results in a design on the weft grain of the cloth. However, when the cloth is wrapped spirally around it, a design on the diagonal of the cloth is the result. Diagonal designs run from lower left to upper right when the cloth is wrapped in a clockwise direction, from lower right to upper left when it is wrapped counterclockwise.

The cloth may be stitched together at the selvages into a tube. If the tube fits snugly on the cylinder, the cloth can be compressed—thread is not needed—into controlled but discontinuous folds, creating patterns of undulating lines that join and break. If the cloth tube fits loosely on the cylinder, a different process is required (see page 137).



1. Cloth is wrapped around cylinder and secured with masking tape.
2. Thread is secured with masking tape then held a short distance from rotating cylinder to control tension as it is wound over cloth.
3. Thread is secured to cloth with tape while portion of cloth is pushed to top of cylinder.
4. All the cloth has been compressed; thread is secured with masking tape.

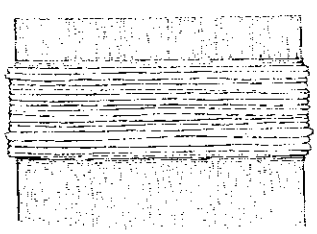


diagram of folds when cloth is pushed straight

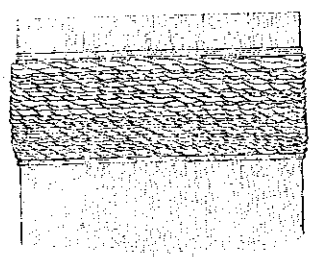


diagram of folds when cloth is twisted as it is pushed

Drawing 39. *Arashi* shibori basic technique

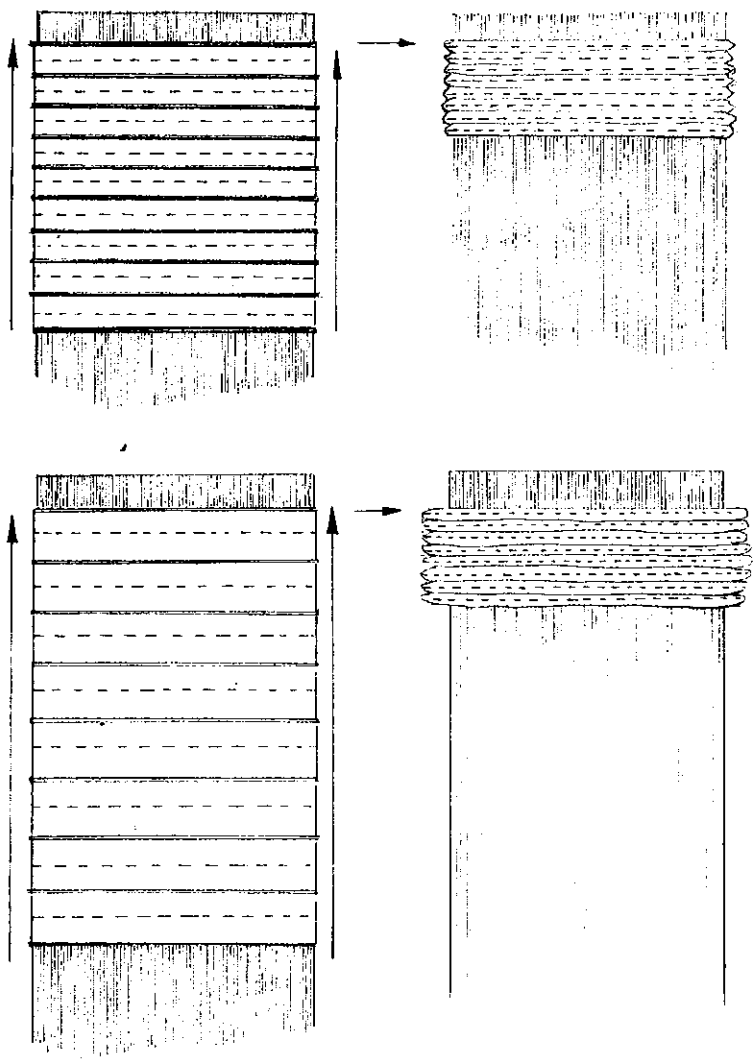
Drawing 39.2 ▪*Step Two—Winding the thread*: The thread (20/4 cotton is used in Japan) is secured with masking tape and is wound onto the cylinder by rotating the cylinder with the left hand while controling the tension on the thread with the right. The right amount of thread tension is a matter of "feel" and experience (see Arashi Notes, page 288). The thread has two functions: to hold the cloth on the cylinder and to regulate the size of

Drawing 40 the folds. The width of the intervals between each turn of thread determines the amount of cloth there will be in each fold when it is compressed. If the intervals are narrow, the resulting design will be small in scale. The thread must be secured when winding is finished.

Drawing 39.3–4 ▪*Step Three—Compressing the cloth into folds*: The cylinder, functioning as a core, protects one side of the cloth from the dye, but unlike other types of core-resisted shibori, the core is used to shape the cloth as well. It is the folds of cloth compressed on the cylinder that create the design in *arashi* shibori.

Drawing 39.5–6 Cloth pushed straight along the cylinder into folds results in patterns composed of

Plates 83, 91 lines. However, when the cloth is twisted as it is pushed, patterns of diamondlike motifs are formed.



Drawing 40. *Arashi* shibori; effects of small and large intervals between winds of thread upon compressed folds of cloth

1. Start with a cylinder no larger than 10 centimeters (4 in) in diameter. The greater the diameter of the cylinder, the more difficult it is to push the cloth along it. The cylinder must be perfectly smooth. Polish it with the finest grade steel wool (000 or 0000) or apply paste floor wax (Johnson's is good) with steel wool and polish the wax with finest grade steel wool. If the wax is polished with steel wool, it should not come off onto the cloth. A cylinder length of 1 meter (3 ft) is sufficient for most purposes and easy to manipulate.

2. The cloth is secured on the cylinder with short (2.5 cm/1 in) pieces of masking tape or by stitching. If the cloth is wider than the circumference of the cylinder, the edges or selvages will overlap. This overlap may be cut off, ignored, or used for decorative effect, as you choose. Masking tape is easy to use if the selvages or cloth edges meet or if any overlap lies flat on the cylinder. Stitching is convenient to make cloth cylinders to fit on the plastic cylinder core, whether or not there is any overlap of cloth.

The masking tape pieces are removed just before the thread winds over them. If they are left in place, the cloth may be somewhat more difficult to push, but the reason they are removed is to avoid the undyed patches they leave. Such patches might not matter, depending on what you are doing with the cloth.

3. At first it may be easier to control the rotation of the pole and the tension on the thread from a sitting position on a chair or stool. Place the cylinder at an angle, with the end on the floor also braced against a wall or some object so it turns more or less in place. Rest the cylinder against the inside of the left knee with the right leg over the cylinder. Keep both feet flat on the floor. Turn the cylinder with the left hand. The thread is held with the right hand about 15 to 20 centimeters (6 to 8 in) from the cylinder.

4. The right amount of tension on the thread is a bit tricky at first, and success must come through practice. First be sure that the thread winds easily off its spool or core, whether you hold the spool with your right hand or just use the hand to control tension. If the thread tension on the cylinder is too tight, the cloth will not move; if too loose, you will have a mess. The only way to master this is to do it. There is no right way. Do what you find to be best for you.

5. Wind the thread for no more than 7 to 8 centimeters (about 3 in) before compressing the cloth into folds. If too much thread is wound, the cloth is difficult, if not impossible, to push along the cylinder. The main drawback of the plastic cylinder is that, unlike the tapered wooden poles once used in Japan, it is uniform in diameter, resulting in greater difficulty in compressing the cloth. Winding the thread for short distances is a necessary adjustment that must be made. With experience one learns just how much of any given cloth can be wound with thread before it is pushed.

When compressing cloth into folds, exert pressure on the cloth rather than on the thread.

Hint: A gradual and easy way of gaining experience in the *arashi* technique is first to stitch the cloth into a tube that fits snugly on the cylinder, then condense the cloth without winding it with thread. Without thread, one can more easily get the feel of moving the cloth along the cylinder. Of course, without the thread to guide the folds, the resulting pattern will be irregular lines.

When one has the feel of compressing the cloth without thread, one can try using thread with the same kind of stitched cloth tube, then graduate to winding the cloth in a spiral around the cylinder

GLOSSARY

akane. Madder *(Rubia cardifolia)*; roots are used in dyeing to produce shades of red-orange.

aobana. Dayflower *(Commelina communis)*; juice extracted from the petals of this blue flower is used as a fugitive ink for marking fabric to be dyed; disappears upon contact with water (see fugitive color). Synthetic fugitive ink is available, but it requires steaming for removal. Marker pens with fugitive color are also available.

asa. A general term for a variety of bast fibers, used specifically to denote hemp *(Cannabis sativa)* but also for ramie *(Boehmeria nivea)*, jute, flax, and other fibers.

bast fibers. Woody plant fibers used to make rope, basketry and matting, textiles, and paper. The major Japanese bast fibers used for textiles until cotton became generally used in the late nineteenth century are:
asa (q.v.), like the English word "hemp," is a general term for many bast fibers, but usually refers to the most common such fiber used in Japan, *Cannabis sativa*.
choma or *karamushi*, China grass *(Urticaceae Boehmeria nivea)*
ira kusa, nettle *(Urticaceae, Urtica urena)*
fuji, wistaria *(Wistaria floribunda)*
kuzu (q.v.) (also romanized *kudzu*), erroneously called arrowroot *(Pueraria lobata)*

bu. Traditional Japanese unit of length measurement, one-tenth of one *sun*; 0.119 inch.

chirimen. Silk crepe. The warp thread is untwisted reeled silk; the weft thread is highly twisted reeled silk. Ordinary crepe is woven alternating two Z-twist and two S-twist threads. When this plain-weave cloth is boiled and scoured, the highly twisted weft creates the rippled texture characteristic of *chirimen*.

discharge dyeing. Removing dyed color from fabric in order to create design. A bleaching agent such as hydrosulphite may be used. See Plate 298.

dōfuku. A medium-length outer cloak worn by the warrior class during the Muromachi period (1333–1573).

e-moyō. "Pictorial design," as opposed to geometric or abstract patterns.

fugitive color. An impermanent color that disappears upon contact with water or exposure to sunlight, such as *aobana* blue (q.v.) and safflower red. Used to mark textiles for dyeing.

furisode. Kimono with long swinging sleeves that nearly touch the ground, worn by young unmarried women from mid-Edo period to the present day.

gromwell. See *shikon*

hakama. Full-cut trousers or culottes worn by both women and men during the Heian period. Heian court ladies wore long, red pleated *hakama* under *jūni-hitoe* (q.v.). Later, as *kosode* became the accepted formal wear, *hakama* were no longer worn by women but continued to be part of men's dress. Today they are men's wear for formal occasions.

harite. Wooden bars used to stretch bolt of kimono cloth (see page 61).

haori. A short, kimono-style jacket worn over the kimono. The front is left open rather than overlapped and is tied with silk cords.

heko obi. Men's soft silk kimono sash for casual wear.

hitatare. A three-quarter length outer garment evolved from the *suikan*, worn by men of the warrior class during the Kamakura period (1185–1333). It is distinguished from the *suikan* by its overlapping neck band; it was worn tucked into pants usually made of matching fabric.

irosashi. Application of color or dyes in the *yūzen* (q.v.) process and certain stencil dyeing processes.

itajime. Resist process in which cloth is folded and clamped between wooden boards or sticks then vat-dyed. This method of patterning was popular especially for red and white fabrics for lining and undergarments. See also *kyōkechi*.

jiban (or *juban*). Undergarment worn beneath the kimono; its construction is similar to that of the kimono. Traditionally the patterns and colors are bold. *Naga-jiban (naga-juban)* are ankle length, and *han-jiban (han-juban)* are hip length.

jūni-hitoe. Attire of Heian period court ladies. Literally, "twelve unlined robes"; each robe is dyed a different shade or color and all are worn together in a way calculated to show in subtle combination at neck, sleeves, and hem.

kaki-e. Hand-painting on fabric, usually with *sumi* ink. The best-known example is the use of *kaki-e* in *tsujigahana* textiles (see Plate 13).

Kanbun *kosode*. Style of *kosode* first popular during the Kanbun era (1661–72), easily recognizable by the full-length design sweeping from shoulder to hem, with a large area of open ground.

kariginu. Literally, "hunting robe"; attire of men of the Heian period nobility consisting of a casual top worn over trousers. Originally for traveling, hunting, and other sports, but later for everyday wear.

kasuri (the Japanese term for ikat). The process of patterning cloth by binding yarns before weaving to reserve areas from dye; involves calculation of where the reserved areas of yarn will appear in the final woven piece.

katabira. Originally unlined summer *kosode*. Later the term specifically referred to an unlined summer garment of *asa* (q.v.) or summer silk (silk that still retains gum so the texture is crisp), while similar articles of cotton and silk were called *hitoe*.

katazome. Paste-resist stencil dyeing. Rice paste is applied through a special paper stencil to resist selected areas from dye. Often dip-dyed, but sometimes dye is applied by brush or thickened and applied by tube. *Bingata* is the bright, polychrome *katazome* developed in Okinawa.

Keichō *kosode*. A style of *kosode*, first popular during the Keichō era (1596–1614). Typically, interlocking or overlapping areas of contrasting colors and complex, disparate designs fill the entire ground. *Somewake*, shibori, and *nuihaku* were most often used.

kesa. Shawllike vestment worn by Buddhist priests, draped over other garments; often made of patchwork to suggest the patched clothing of the poor.

kikkō. "Tortoiseshell"; hexagonal motif used as an allover pattern or as a single unit. Has felicitous connotations because the tortoise symbolizes longevity.

kimono. The traditional garment of Japan, developed from the *kosode* during the early Edo period (1615–1868). A straight-cut, wrap-around robe worn with sash (obi).

kintōshi. Silk fabric woven with gold threads.

kōkechi. Ancient term for tied or bound resist. Examples from seventh and eighth centuries are in the Shōsō-in repository.

kosode. Originally an undergarment during the Heian period, with smaller sleeves and sleeve openings than the outer robes (such as *jūni-hitoe*). Later it developed into the outer garment and then evolved into the modern kimono.

kuzu. Bast fiber from stems of the *kuzu* plant *(Pueraria lobata)*, used for weft with cotton (q.v.), or silk warp to make *kuzu-fu* or *kappu* (*kuzu* cloth). This cloth is slightly stiff and has an attractive sheen. The root of the *kuzu* plant yields a starch commonly used in Japanese cooking and also has medicinal uses.

kyōkechi. Ancient Japanese resist process in which cloth is folded and then clamped between carved wooden blocks. Several colors are applied through holes in the blocks, which form reservoirs to contain dye. Examples from the seventh and eighth centuries are in the Shōsō-in collection

madder. See *akane*.

matsukawabishi. "Pine bark lozenge," a geometric motif composed of three superimposed diamond forms (see page 26) used as an allover repeating pattern as well as a single unit.

mingei. "Folk art" or "folkcraft." This term was coined by Sōetsu Yanagi and his friends Shōji Hamada and Kanjirō Kawai in the 1920s. They initiated the *mingei* movement in Japan, which brought awareness of the value and beauty of traditional crafts of ordinary people, expressed in objects designed for use in everyday life.

murasaki. See *shikon.*

neri-nuki. Glossed silk with a distinctive sheen. The warp thread is reeled silk that has not been scoured, and the weft thread (*neri-ito*) is degummed reeled silk.

nuihaku. A combination of embroidery and applied gold or silver leaf (see *surihaku*).

obi. Sash worn with kimono. A woman's obi is wide and tied in a large knot or bow. A man's obi is narrow and worn around the hips.

obiage. In present-day usage, a decorative silk scarf worn with an obi to cover the thin cord that secures the obi knot. *Obiage* came into fashion during late Meiji (1868–1912), and during the Taishō period (1912–26) shibori became the most popular means of decorating these scarves.

overdyeing. Dyeing one color over another to obtain a desired hue, e.g., yellow overdyed with indigo produces green.

pongee. From the Chinese *benji*, "own loom." A soft, thin silk or a textile made of another fiber (such as rayon) that resembles this silk. Originally the term referred to silk produced in North China from silkworms fed on oak leaves, resulting in soft and nubby, naturally honey-colored cloth.

purple root. See *shikon*

reserve or resist. A substance or technique used to protect an area of yarn or textile from dye.

resist dyeing. Patterning of yarn or fabric by protecting selected areas from dye. Patterns can be created by the application of substances such as wax, paste, and mud, and physically manipulating the cloth. Typical processes are ikat *(kasuri)*, batik, paste and stencil dyeing *(katazome)*, and shibori.

rinzu. Monochrome figured satin-weave silk.

rōkechi. Ancient term for wax-resist dyeing. Examples from the seventh and eighth centuries are in the Shōsō-in collection.

rōketsu. Wax-resist dyeing (batik). This is not a continuation of the early *rōkechi* but was revived in the early Taishō period (1912–26) by Tsuruichi Tsurumaki, a textile artist and scholar.

saya. Light monochrome figured silk with pattern in twill weave.

seifuku. During the Heian period, garments of civil employees without rank.

seikaiha. Literally "blue ocean wave"; an imbricate scallop or shell pattern considered to be a stylization of waves.

shaku. Traditional Japanese unit of length measurement; about (0.994) 1 foot.

shikon (or *murasaki*). Gromwell (*Lithospermum erythrorhizon*); literally, "purple root," used in dyeing to achieve shades of purple.

shinshi. Flexible split bamboo sticks with needles embedded in each end; used to stretch across warp of fabric for dyeing and drying (see p. 61).

shippō. Interlocking circles. Literally "seven treasures"; a design said to symbolize the Seven Treasures of Buddhism: crystal *(hari)*, lapis *(ruri)*, gold *(kin)*, silver *(gin)*, mother-of-pearl *(shako)*, coral *(sango)*, and carnelian *(meno)*.

somewake. Dyeing in which large areas of ground are dyed in different colors. Typical of *tsujigahana* and Keichō *kosode.*

suikan. A large-sleeved upper garment worn over *kosode*, tied at the neck and tucked into the

waistband of pants. During the Heian period (794–1185) *suikan* were worn by lower-class men; later the garment became acceptable as casual wear for men of all classes.

sun. Traditional Japanese unit of length measurement; 1.193 inches.

surihaku. Stenciled application of gold or silver leaf using a special adhesive. *Tsujigahana* textiles and Keichō *kosode* provide examples of *surihaku*.

tan. A standard bolt of kimono cloth sufficient to make one kimono. Traditional width of fabric is approximately 36 centimeters (14 in) and length is 10.6 meters (about 12 yards).

tenugui. A small, all-purpose towel made of lightweight cotton, often with a stenciled or shibori design and indigo dyed.

tsujigahana. Name given to a group of textiles that became fashionable during the latter part of the fifteenth and early sixteenth centuries. Mainly silk garments *(kosode, dōfuku)* are known from the literature and surviving examples. Stitched shibori of both small and large areas is used to achieve the typical effects of *tsujigahana*.

uchikake. During the Edo period (1615–1868), an outer robe worn by women of the upper class for formal wear. Now worn only for traditional weddings, thus sometimes translated as "wedding robe."

uchiki. A large-sleeved outer robe worn by court ladies of Heian period; it later became part of formal attire, worn over *kosode*.

ukiyo-e. Woodblock prints of everyday life during the Edo period (1615–1868), reflecting the culture of the townspeople.

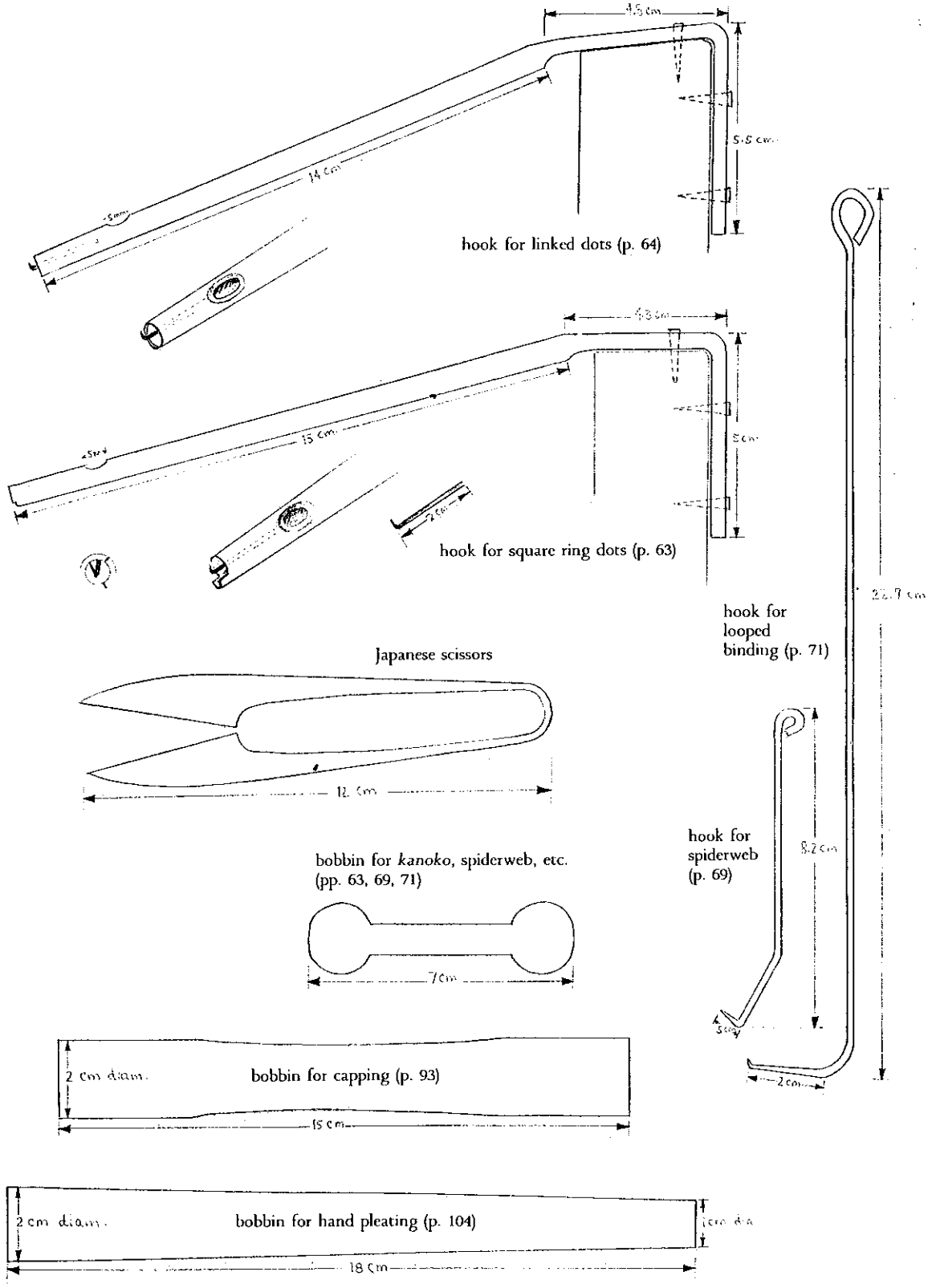
vat dyes. Generally fast dyestuffs that are insoluble in water but in a reduced state form compounds soluble in alkalis. This reduced dyestuff is deposited in or on fabric or yarn immersed in the dye solution (the vat) and is oxidized upon contact with air, becoming the original stable compound in the fiber. This type of dyeing is called mechanical bonding, as opposed to chemical bonding.

viscose rayon. Fiber made from cellulose treated with potassium hydroxide and carbon disulfide; can be dyed in the same manner as plant fiber.

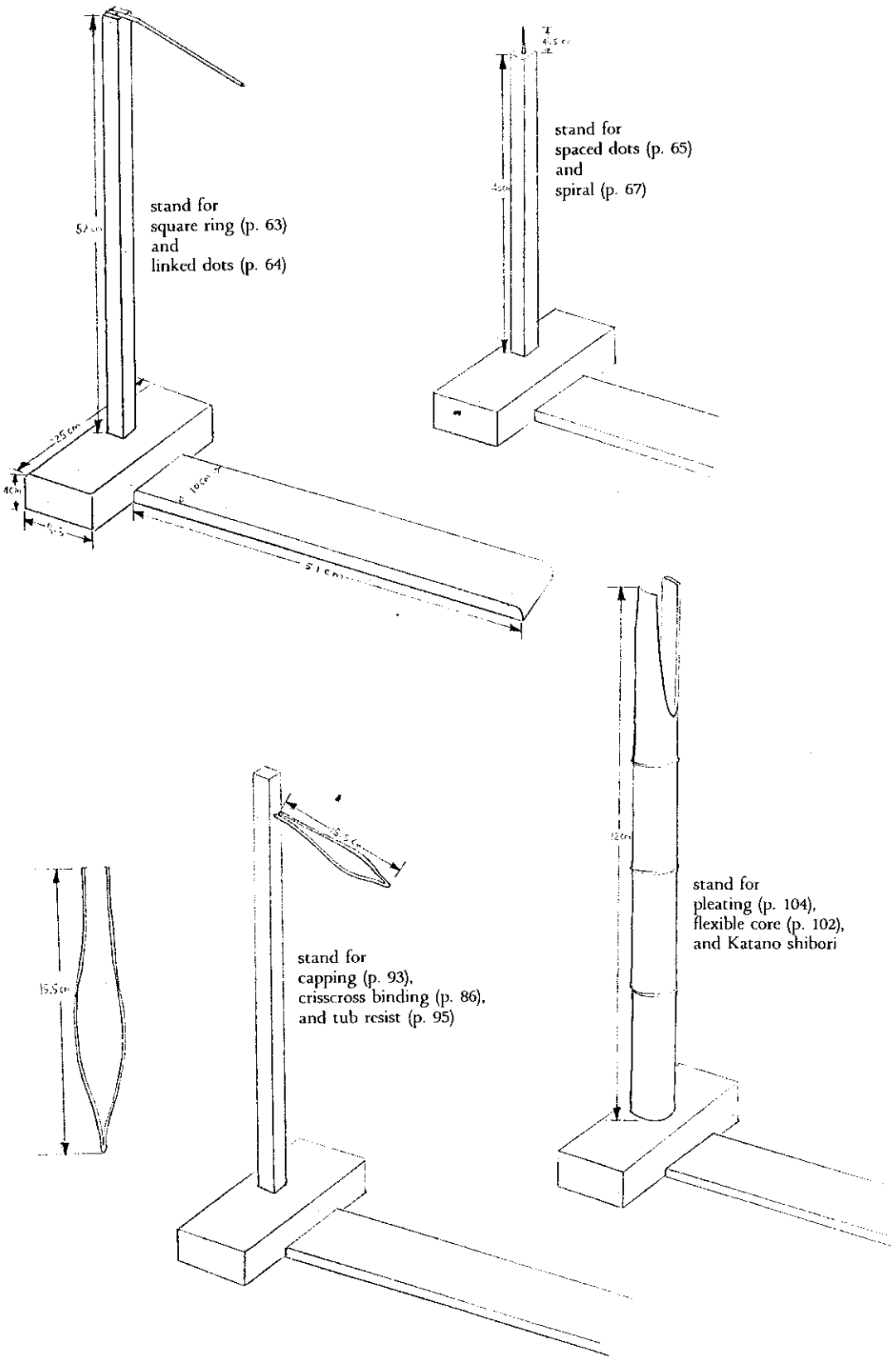
yogi. A kimono-shaped quilt.

yukata. A single-layered cotton kimono-style garment usually worn after the bath or for casual wear, traditionally embellished by paste-resist, stencil dyeing, or shibori, and indigo dyed. The term is derived from *yu-katabira*, a single-layered bath garment (see *katabira*).

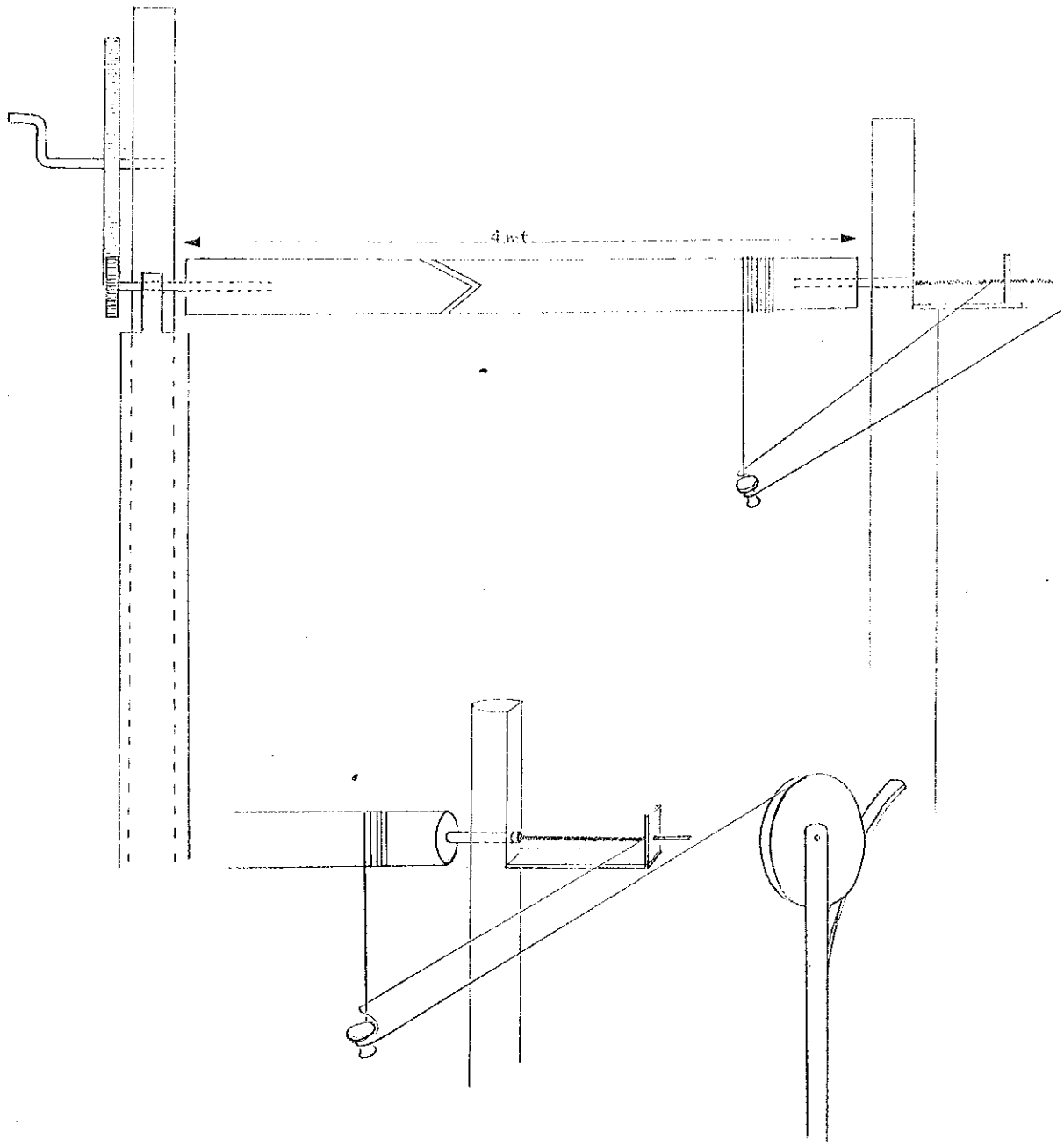
yūzen. Complex method of polychrome fabric decoration using paste as the resist medium. The paste is applied with a cone-shaped applicator or through stencils, and dyes are applied with small brushes. Highly popular in the Edo period (1615–1868) and still widely practiced today.



Drawing 43. Hooks, bobbins, scissors



Drawing 44. Stands



Drawing 45. Winding mechanism for traditional *arashi* shibori process