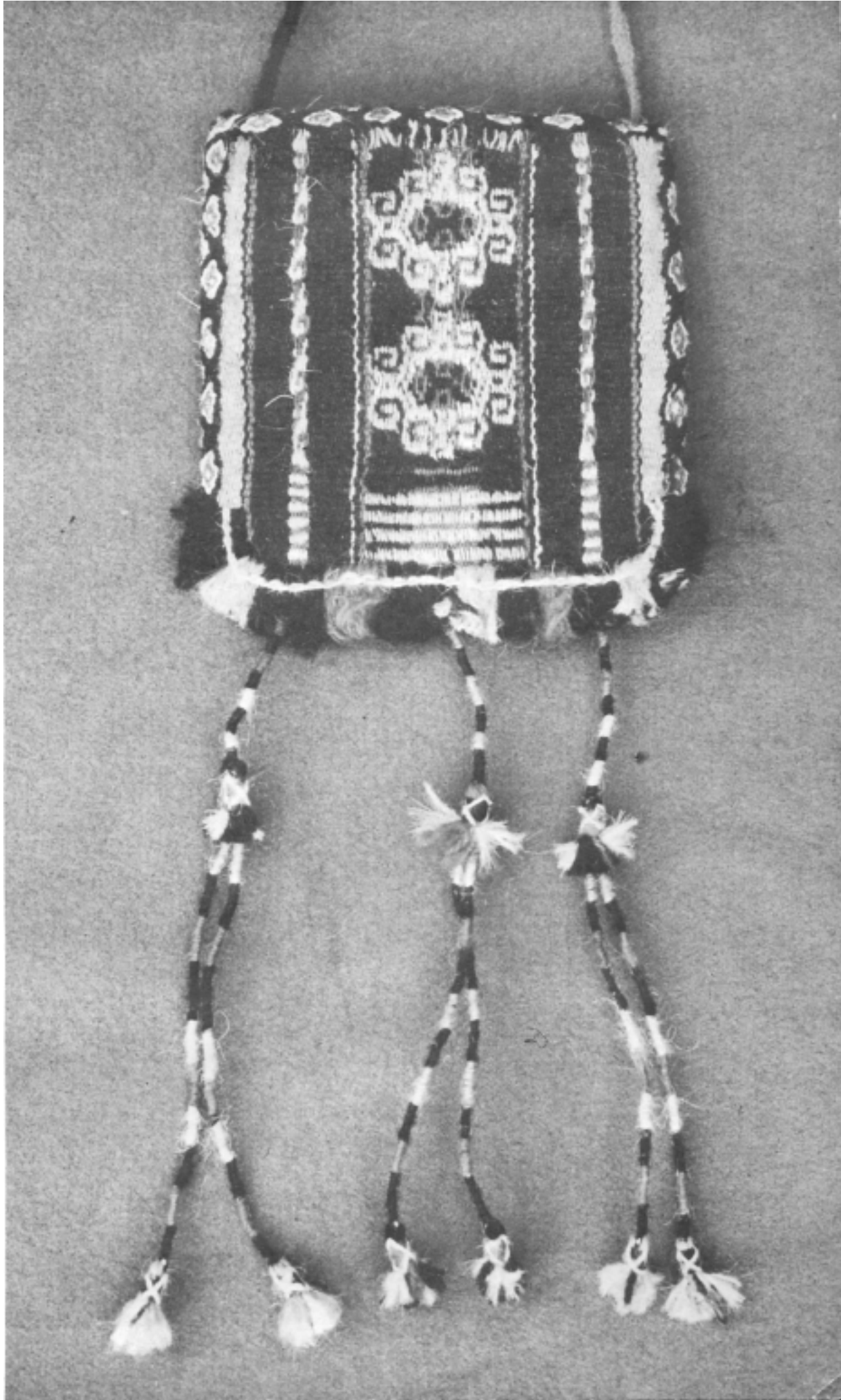


The Weaver's Journal

APRIL 1977 VOLUME 1 NUMBER 4 ISSUE 4

\$2.00



Countryside II

Multiple-Harness Looms

- * Jack-type
- * Four or Eight Harnesses, Convertible
- * Three Sizes: 36, 42, and 48 Inches
- * Quick Action—Fast Harness Return
- * Wide, Accurate Shed * Balanced Beater
- * Easy to Thread * Open-Eye Heddles
- * Quick-Change Wire Tie-Ups
- * Easy Treadling
- * Heavy Canvas Aprons
- * Passes thru 30-inch Doorway
- * Hard Maple
- * Danish Oil Finish

Our goal . . . in building the Countryside II is to provide serious weavers with a loom that will be easy to warp, easy to use, and that will help weavers get the best results from their efforts in the least time. And it should stand up for years.

The type of loom you select and the advantages it offers can be translated into enjoyment . . . time saving . . . easier operation . . . and if you weave as a business, in dollars of work produced. For these reasons, we hope you will consider the advantages which Countryside II offers you.

Sizes Available

Three weaving widths are presently available: 36, 42, and 48 inches. The loom is made with 4 and 8 harnesses; you can buy the loom with 4 harnesses and add four later; however, it is less costly to buy the loom with 8 harnesses at the outset.

Smooth-Action Jack-Type Design

The Countryside II is of jack-type design, the harnesses being raised by an all-aluminum lift system that assures their moving straight up and down, providing a clean, even shed. The lift system provides unusually easy treadling and quick return. The harnesses are of high strength aluminum and travel in hardwood tracks. Harnesses cannot "hang up" or interfere with each other, thus assuring an accurate shed. There is no rusting and no paint to peel off.

Hardwood Construction; Oil Finish

The Countryside II is built of selected kiln dried northern hard maple . . . carefully sanded, and finished with durable, water resistant Danish oil, hand applied. Maple is extremely strong . . . dent and splinter resistant . . . and stable in its dimensions.

Quick Tie-Up System

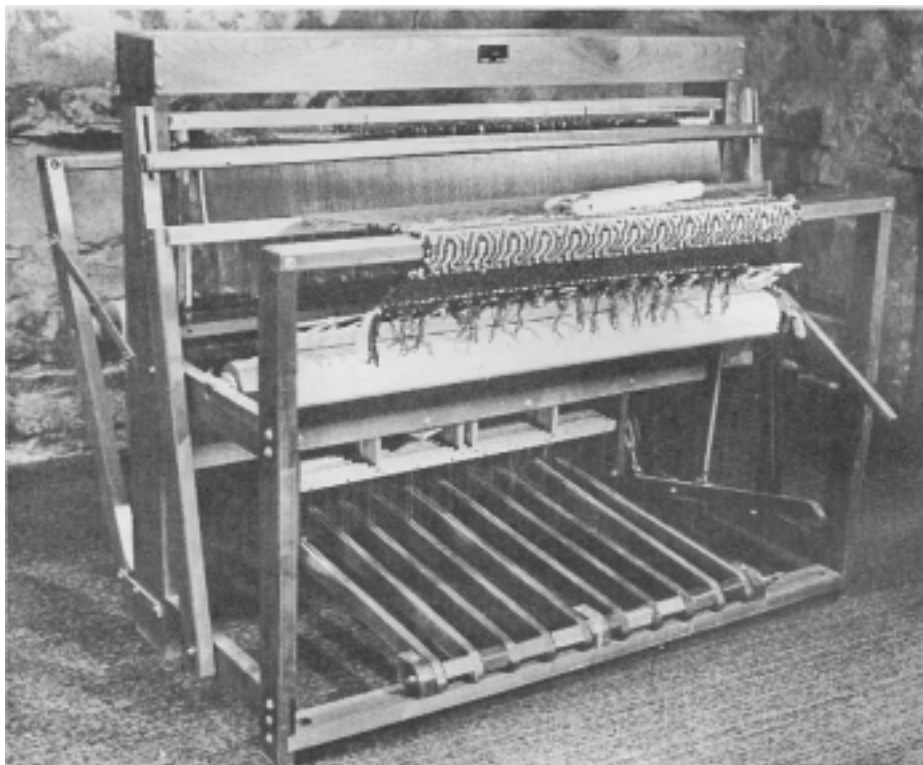
The hardwood treadles are attached to the aluminum lamms with steel wires which attach in a few seconds, need no adjusting, and cannot kink like chain, or wear thru like cord. There are no bolts in the tie-up system.

Wide Spaced Treadles

All Countryside II looms have ten treadles, spaced so two cannot be depressed at once by mistake.

Leg and Knee Room

For tall weavers, or weavers who like to stand while weaving, the high (35") front beam gives plenty of leg and knee room.



"No-stretch" Warping

The breast beam can be easily removed for warping if desired. The rear beam folds in, or down to the floor, to permit working within inches of the heddles. It is not necessary to lean over the beams to warp the Countryside II, making for faster warping in greater comfort.

Beams, Aprons, Ratchet, Brake

The rotary beams are of redwood, used for its dimensional stability. The warp beam has a friction brake which can be released slowly to prevent warp tangles that can occur with a ratchet-type brake. The cloth beam has a ratchet with an easy-to-reach handle to advance the warp. Front and back aprons are of heavy canvas, put on at the factory. Apron rods are 3/8-inch round aluminum rod.

Balanced Beater for Easy Operation

The beater is heavy enough for hard beating and is balanced for easy operation. The angle between the reed and the warp is close to 90° in all positions. There is an ample shuttle race. Extra weight can be added to the beater by fastening a metal bar under the shuttle race.

Wide, Clean, Accurate Shed

In the Countryside II, the warp threads lie flat and rise evenly, all the way across, giving a wide, clean shed (approx. 2 1/4 inches), adequate for large boat and rug shuttles. Harnesses in the DOWN position rest on a sloping base, which keeps the threads in the same plane. This prevents picking up threads by mistake with the tip of the shuttle.

Easy-to-Thread Heddles

Flat steel heddles with large eyes are supplied—20 per inch of weaving width. They are easy to thread, and easy on the warp. Wire heddles are optional.

Standard Equipment

The basic loom as ordered (4 or 8 harnesses); plain warp beam; 20 flat-steel heddles per inch of weaving width; two canvas aprons; 4 apron rods; lease sticks; sleigh hook; friction brake on warp beam; ratchet on cloth beam; 12-dent plain steel reed.

Dimensions

Height: 47 inches. Depth: Open—45 inches; closed—29 inches. Length: 10 inches more than weaving width. The loom will fit in van-type automobiles (including VW).

Optional Equipment at Extra Cost

Loom Tray. Fits on top of loom; 6 by 34 inches inside. Holds shuttles, bobbins, reed hook, crank, etc. Maple, with hard-board bottom.

Sectional Beam. Consists of 4 removable sections which attach to warp beam with screws. Wood dowel separators on 2-inch centers.

Delivery Time

Delivery time depends on the orders on the books and the looms in production. We will be happy to give you an estimated delivery (or shipping) date if you will tell us the size loom you need. In general, delivery time is good.

Terms of Sale

Fifty percent with order; balance when loom is ready for shipment.

Greentree Ranch Wools

163 N. Carter Lake Road

Loveland, Colorado 80537

(303) 667-6183

The Weaver's Journal

Quarterly Journal For Textile Craftsmen

Volume I, Number 4, Issue 4

April, 1977

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COVER: Bolivian coca bag with colorful edge-binding (ribete). Collection of Lynn Meisch, photo by Adele Cahlander. See page 13.

Letter from the Editor

With this issue the staff of *"The Weaver's Journal"* is getting ready to celebrate its first birthday. On this special occasion I want to express a deeply felt appreciation for the staff who are working diligently toward the success and the quality of *"The Weaver's Journal"*. I thank those subscribers who have written kind letters of encouragement and suggestions. I also thank those readers who have contributed articles for publication and have shared their interest and knowledge of a particular technique or approach to weaving. Last, but not least, I want to thank our advertisers for choosing *"The Weaver's Journal"* to communicate to others about their fine services and products which they make available to the weavers.

The growth of the journal has been gratifying to the staff, all of whom are devoted weavers themselves. The growth has justified our move to larger quarters; I do hope that everyone notes the change of address. Our new location will permit us to weave large quantities of samples of the weaves described in the journal. In the near future, we hope to make these samples available in the form of a "Portfolio" addition to *"The Weaver's Journal"*.

We have many more plans for the future which will delight weavers of all levels of proficiency but we will let those be so many pleasant surprises.

A yearly index of the subject matter will be compiled. The index for Vol. I, and a listing of errors occurring in Vol. I, will be mailed together with the July, 1977 issue.

Our goal is to publish an inspiring and useful journal. Don't hesitate to communicate and send us suggestions so that we can better accomplish this goal.

List of Advertisers

Anderson Ranch p. 36
Broadway Yarn Co. back cover
Greentree Ranch Wools inside front cover
Japan: Craft and Folk Art Tour p. 12
The Jute Box back cover
Kouyoumoutzakis, Stavros p. 20
Ramus, Katherine p. 32
The Weaver's Shop back cover
The Weavers' Store back cover
Weavers' Loft p.20

Boundweave

by Jane Evans

Characteristics

In a broad sense, boundweave is a weft-face weave, other than plain weave, which follows a set treading sequence.

Boundweave is not characterized by a specific threading system but by a special weaving method. Patterns are woven by choosing an appropriate threading and treading; then, while the treading sequence remains the same, the weft colors change according to a design. Many color designs can be woven on the same draft.

The most commonly used boundweaves are woven on four harness twill or overshot drafts, by treading only the four pattern sheds. (See Fig. 1).

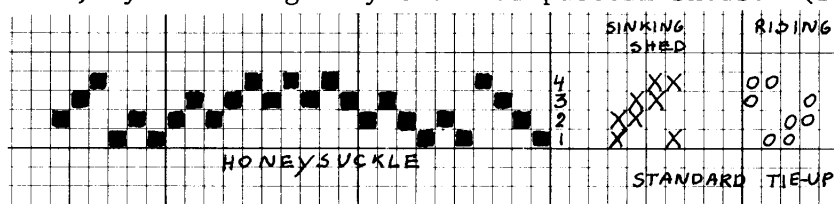


Fig. 1

These sheds are made by raising harnesses 1 and 2, harnesses 2 and 3, harnesses 3 and 4, harnesses 1 and 4. These four shed sequences will be referred to as 4 harness boundweave treading units. Each unit is characterized by a set color order and by a treading order. Four is the maximum of colors in any one unit. During the weaving, the same unit may be woven once or repeated as dictated by the design; then the weft colors are rotated or changed and the new unit is woven as often as needed. This procedure is repeated throughout the fabric.

In some instances the design requires units in which the treading order has been changed, usually just reversed.

It is repetition and orderliness in pattern that makes the eye-catching designs characteristic of boundweave fabrics.

Uses

Boundweave makes a thick weft-face cloth. The weave is good for sturdy fabrics where bulk is not a problem, such as rugs, bags, upholstery, decorative trims, afghans, pillow covers or wallhangings.

Materials

Warp: Cotton or linen are good. Although the warp is covered in this weave, the warp ends will show in the fringes unless the fabric is hemmed. Cotton carpet warp, size 4/8 used threefold (three threads make up one warp end) is set at 5 e.p.i. for heavy fabric or used double or single up to 12 e.p.i. for

thinner fabric.

Linen rug warp, size 8/3 set at 6 e.p.i. is suitable for rugs. Fine linen, 40/2 set from 15 to 24 e.p.i. or 16/2 set at 10 e.p.i., is suitable for fine fabrics. Seine twine, size #6 (about 1000 yards/lb.), doubled, set at 8 e.p.i. is suitable for 2/8 wool weft. Because the warp sett depends so much on the weft, all suggested setts have a wide range.

Some sources recommend grouping fine warp threads in heddles and dents rather than single thick threads, to avoid vertical ridges in the fabric.

Weft: This thread needs good packing ability. Colors should not fade together when closely aligned. Usually wool is best. A bigger weft does not necessarily weave faster or better, because it may not pack in well.

It is very important to get good warp/weft balance. The warp must be covered. Yet the warp should be set fine enough to keep fabrics firm and the web building up at a reasonable rate.

Weaving Variations

1. FLAMEPOINT. Most authors agree this is classical boundweave. The treadling order of the unit is 1-2, 2-3, 3-4, 1-4. Four colored shuttles are used; A, B, C, D. The treadling does not vary, but the colors rotate as follows (read across rows):

Shed	1-2	2-3	3-4	1-4	
Color	A	B	C	D	Repeat this unit X number of times.
	B	C	D	A	Repeat this unit X number of times.
	C	D	A	B	Repeat this unit X number of times.
	D	A	B	C	Repeat this unit X number of times.

Each horizontal row of 4 sheds is one unit of treadling, and can be repeated as a total unit as often as desired. Then the next horizontal row follows, with the same treadle sequence but with color B starting on the 1-2 shed.

Patterns can be reversed after a 1-4 shed by reversing both the treadling order and the color sequence. Avoid doubling the 1-4 shed and color at the reversing point.

More repeats of a treadling unit, made before moving on to the next unit, give a steeper angle to the pattern. Fewer repeats of units yield flatter patterns.

Flamepoint results are best seen if 4 related colors are used as weft. Place the brightest color on the shed giving the narrowest overshoot. Use a draft which gives vertical stripes in varying width, such as the draft in Fig. 1. This gives a more interesting design.

Flamepoint variations can be made by using a systematic change in color order among the A, B, C and D choices. An example of this is the Flame Bargello, first published in a Shuttlecraft bulletin. Again 4 colors are used (read across rows):

Shed	1-2	2-3	3-4	1-4
Color	A	A	A	A
	A	A	A	B
	A	A	B	B
	A	B	B	B
	B	B	B	C
	B	B	C	C
	B	C	C	C
	C	C	C	D
	C	C	D	D
	C	D	D	D

Another variation uses 3 colors on the 4-shed unit. This is the Indian Saddle Blanket weave (*The Weaver's Journal*¹). Treading remains constant while colors rotate.

2. BOUNDWEAVE ON ROSEPATH. The short length of Rosepath threading repeat (Fig. 2), makes for a busy pattern when done in boundweave. Generally this is done on opposites (see variation number 4) and in few colors. It is especially popular in Sweden. Rosepath and other point twills are very suited for the Indian Saddle Blanket weave mentioned before. Figures are often woven on Rosepath and point twill drafts using the 3/1 twill tie-up.

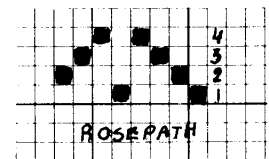


Fig. 2

3. FIGURES. The draft of Figs. 3 and 4 which are overshot patterns derived from point twills for a variety of designs. It gives wider vertical lines.

Patterns are formed by controlling a vertical line's color within its appearance in the basic 4-shed unit (1-2, 2-3, 3-4, 1-4). This type of patterning is especially well covered in the *Handcrafts*² reference. Experiments in figures are based on the "key" described under "Starting a Boundweave Sampler", below. The figures illustrated in Fig. 5 can be woven on the draft of Fig. 3.

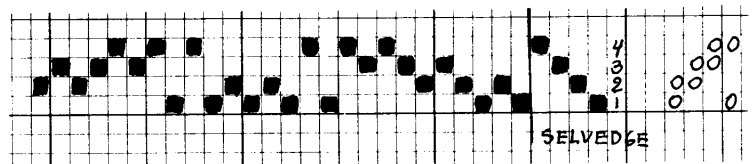


Fig. 3

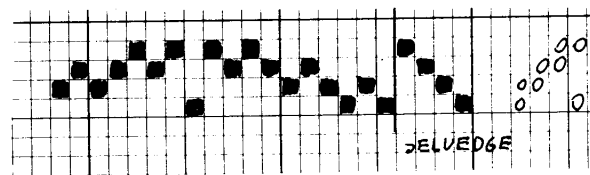


Fig. 4

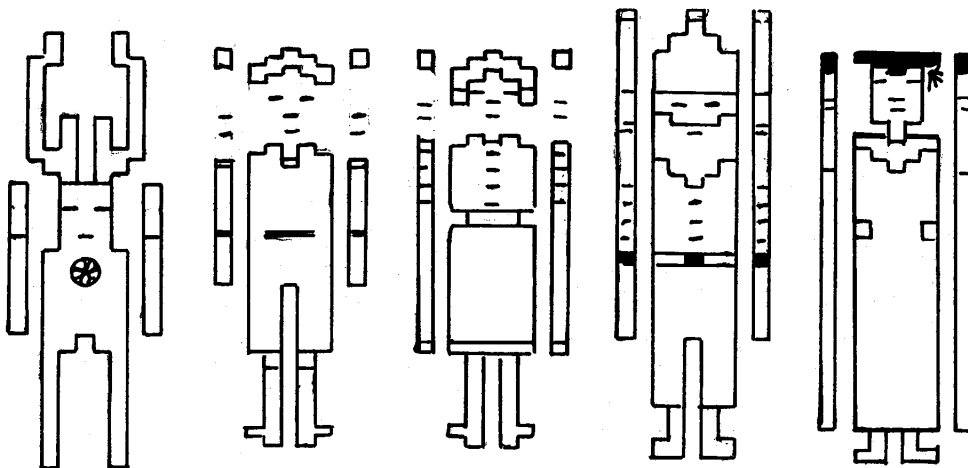
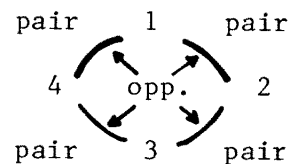


Fig. 5

4. OPPOSITES. There is a difference between the terms "woven on opposites" and "written on opposites". The concern here is woven on opposites. Some authors list it as a separate method of weaving while some see it as a boundweave variation. The structure differs somewhat from classical boundweave, but the visual results are similar.

Again the four sheds are used: 1-2, 2-3, 3-4, 1-4.

Significant to this method is what pair of harnesses lies opposite a given pair when looking at the following diagram of harnesses:



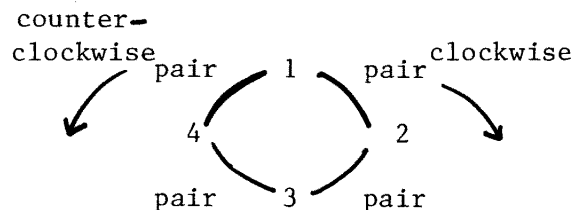
It can be seen that the opposite shed to 1-2 is 3-4.
 It can be seen that the opposite shed to 2-3 is 1-4.
 It can be seen that the opposite shed to 3-4 is 1-2.
 It can be seen that the opposite shed to 1-4 is 2-3.

To weave a pattern, a shed is used and then is always followed by its opposite shed, woven in a different color. For example, 1-2 in white would be followed by 3-4 in red. This type of weaving does not use the typical 4 harness boundweave unit: 1-2, 2-3, 3-4, 1-4. The shed sequences may be based on an overshot treadling sequence, a summer/winter sequence, or any sequence desired. The rule simply is that an opposite shed follows the main pattern shed.

An example is Honeysuckle (Fig. 1) on opposites:

1-2, 3-4, 2-3, 1-4, 3-4, 1-2, 1-4, 2-3, 1-2, 3-4, 1-2, 3-4, 1-2, 3-4, 2-3, 1-4, 2-3, 1-4, 2-3, 1-4, 3-4, 1-2, 3-4, 1-2, 3-4, 1-2, reverse to beginning.
 The underlined sheds are in pattern color, the other sheds are in background color.

5. ITALIAN FASHION. Berta Frey³ is the only author who directly refers to this weave as a type of boundweave. Probably she does so because it is left-face and has a strict treadling/shuttle order. However, it differs from classic boundweave in that the treadling order progresses while the color order remains rigid. Italian boundweave is done with three colors: the pattern color A and the background colors B and C. The first sheds of the units are the standard pattern sheds of the twill or overshot draft. If the basic pattern treadling is a straight twill which progresses clockwise on the circle diagram, the first sheds of consecutive units would be: 1-2, 2-3, 3-4, 4-1. If the treadling progresses counterclockwise, the first sheds of the consecutive units would be: 4-1, 3-4, 2-3, 1-2. The treadling sequence within a given unit depends on the direction of the basic pattern treadling.



Units For Clockwise Direction

Units For Counterclockwise Direction

1-2	2-3	1-2	4-1	4-1	3-4	4-1	1-2
2-3	3-4	2-3	1-2	3-4	2-3	3-4	4-1
3-4	4-1	3-4	2-3	2-3	1-2	2-3	3-4
4-1	1-2	4-1	3-4	1-2	4-1	1-2	2-3

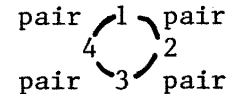
Each unit of treadling consists of the 4 sheds in a horizontal row. The third shed is the same as the first. Each unit is repeated according to the basic pattern treadling. When the direction of the basic pattern treadling changes, add the first two weft picks of the last repeat. For example, the basic pattern treadles for the Honeysuckle of Fig. 1 are: 3-4, 4-1, 1-2, 2-3, 3-4 (3x), 4-1 (3x), 1-2 (6x) * 4-1 (3x), 3-4 (3x), 2-3, 1-2, 4-1, 3-4*.
 * indicates where the direction reverses.

The color sequence remains A, B, A, C throughout. The complete treadling and color sequence is this:

A	B	A	C				A	C	A	B		
3-4	4-1	3-4	2-3	1x			4-1	3-4	4-1	1-2	3x	
**4-1	1-2	4-1	3-4	1x			3-4	2-3	3-4	4-1	3x	
1-2	2-3	1-2	4-1	1x			2-3	1-2	2-3	3-4	1x	
2-3	3-4	2-3	1-2	1x			1-2	4-1	1-2	2-3	1x	
3-4	4-1	3-4	2-3	3x			4-1	3-4	4-1	1-2	1x	A C
4-1	1-2	4-1	3-4	3x	A	B	*3-4	2-3	3-4	4-1	1x +	3-4 2-3
*1-2	2-3	1-2	4-1	6x +	1-2	2-3						

Repeat from **.

The above treadling is read across as a unit. By reading down the first column only, one has the standard overshoot treadling sequence as drawn in for this pattern. The other sheds are related by using the 2 harness pairs adjoining the pattern pair of harnesses. One member of the pattern pair is shared by each of the adjoining pairs. For example, 1-2 is adjoining pairs 1-4 and 2-3. On the circle diagram the harnesses are paired like this:



The above treadling for Italian weaving has a 4-shed sequence for one unit of the weave. The main pattern shed appears before each B or C shot of background weft. One Atwater variation is to add a final shot when all repeats of a unit are woven. This last shot is on the main pattern shed in its usual color. For example:

Color	A	B	A	C	A	
Shed	3-4	2-3	3-4	1-4	3-4-	This last shot is used only after all desired repeats of a unit are done.

There exists a 3-shed sequence for Italian weave. The second main pattern shot is left out. When a unit is complete in all repeats it is closed with one main pattern shot, as in the Atwater variation. The first line of Honeysuckle would read:

Color	A	B	C	A	
Shed	3-4	1-4	2-3	3-4-	This last shot is used only after all desired repeats of a unit are done.

6. KROKBRAGD. A 3 harness type of boundweave using the draft of Fig. 6 in 3 colors, A, B, and C. A treadling unit consists of:

Shed	1	2	3
Color	A	B	C

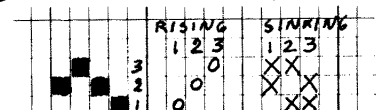


Fig. 6

The treadling order is rigid, as in 4 harness classic boundweave. The colors rotate and the number of repeats of the treadling unit can vary. Note that shed 2 is a tabby shed; this gives firmness to the fabric.

An extended 3 harness twill allows for a greater number of narrow vertical lines in the pattern. Draft of Fig. 7 is used for this. The tie-ups at Fig. 6 still are used.

7. COLLINGWOOD'S VARIATIONS. Numerous color and treadling variations for weft face rugs on 3, 4, and more harnesses are found in Collingwood's book "Techniques of Rug Weaving".⁴ These directions start with classical boundweave treadlings and then range into many related possibilities. The information is so thorough, succinct, and vast that it should be studied directly from that source.

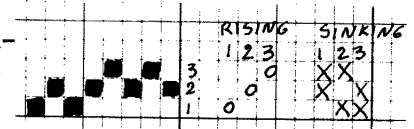


Fig. 7

Starting A Boundweave Sampler

The most flexible drafts are the ones of Fig. 1 and Fig. 3. Considering the warp available, a sett must be found by experiment with available wefts. No warp should show through the web. For the sampler depicted in Plates 1 and 2, 2/9 wool on a 4/8 cotton warp worked when sett at 7½ e.p.i. The draft is given in Fig. 3.

The following "key" is suggested in Handcrafts. It seems a very logical approach. Begin with a light heading 16 shots (4 units) long. Then make a basic reference key for selecting treadle combinations. This key allows a weaver to trace back along the vertical ribs of the warp to see what weft position a color should take. Each horizontal unit of 4 shots uses only 2 colors, A (light) and B (dark). Directions are for sinking shed loom. Read across:

Shed	1-2	2-3	3-4	1-4	
Color	B	A	A	A	4x
	A	B	A	A	4x
	A	A	B	A	4x
	A	A	A	B	4x

Next, weave 4 units of all A or all B color. Note that 4 shots are necessary for one full horizontal line, or unit. A key border is now established and designs can be begun.

Variations number 1, 3, 4, and 5 given above are shown in the sampler.

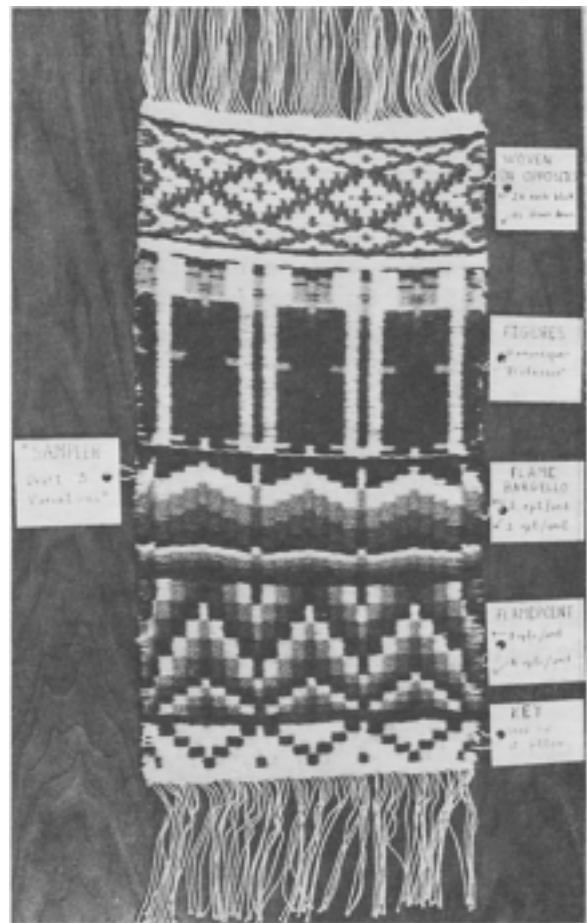


Plate 1

Plate 2 is a sample of boundweave, Italian fashion using 4 sheds, 3 colors and woven in the Atwater variation described above in number 5.

The following directions are for the "Professor" illustrated in Fig. 5 and Plate 1. He is in 4 colors, W (white), B (Black), P (Pink), and R (Red). The draft is given in Fig. 3. He is woven upside down.

Shed	3-4	1-4	1-2	2-3	
Color	W	B	B	W	2x
	W	B	W	W	2x
	B	B	B	W	1 7/8"
	B	B	P	W	3x
	B	B	B	W	7/8"
	R	B	B	W	3x
	R	R	B	W	2x
	P	R	R	W	2x
	P	W	W	W	2x
	P	P	W	W	2x
	R	P	W	W	1x
	P	P	W	W	1x
	R	P	W	W	1x
	P	P	W	W	3x
	P	B	W	W	1x
	P	P	W	W	2x
	B	P	W	W	1x
	B	B	W	W	3x
	B	B	B	W	1x
	W	W	W	W	

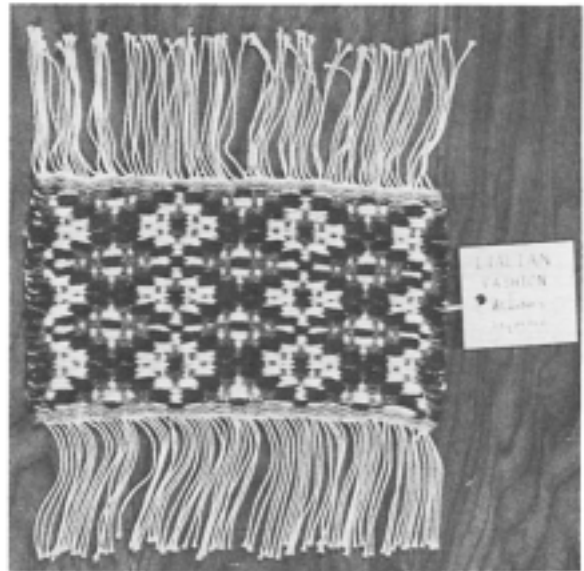


Plate 2

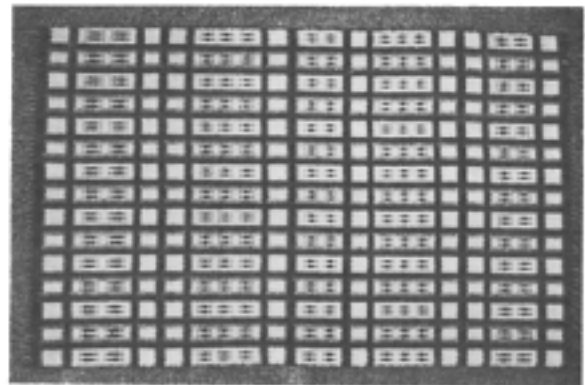


Plate 3

The rugs shown in Plates 3 and 4 are woven in a straightforward 4 harness boundweave.

Warp: 8/3 linen from Berga Ullman

Weft: Rug #1, Cretan homespun from Stavros Kouyoumoutzakis, heavy weight in dark grey and natural.
Rug #2, 3-ply rug wool from Henry's Attic.

Sett: 6 e.p.i.

Width in reed: 44"

Draft: See Fig. 9

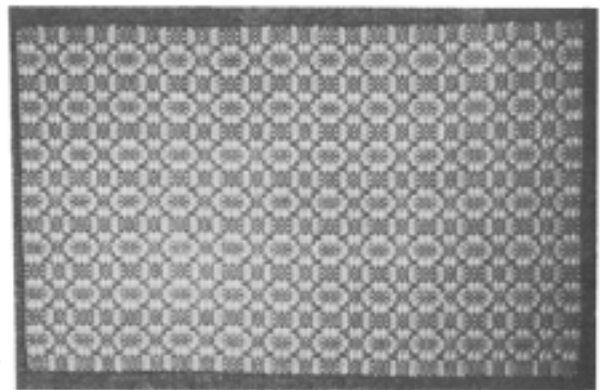


Plate 4

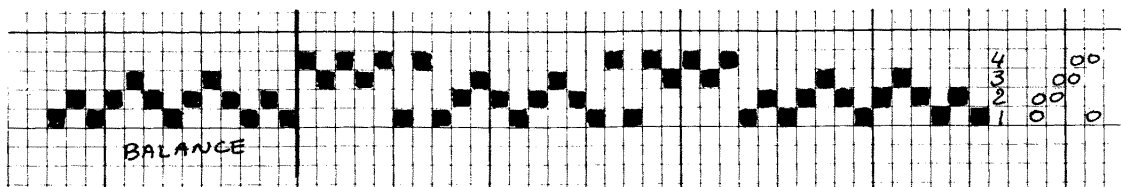


Fig. 9

Use 7 repeats plus balance for a total of 265 ends. Floating selvages, two extra warp threads for each selvedge which are not threaded through heddles are sleyed in the same dent as the first and last warp end. The basic boundweave unit is: 1-2, 2-3, 3-4, 1-4, used throughout the first rug. The second rug is Italian boundweave, the Atwater variation. The complete treading and color sequence for one repeat is as follows:

A	B	A	C		A	B	A
3-4	2-3	3-4	4-1	3x	+ 3-4	2-3	3-4
A	C	A	B		A	C	A
4-1	1-2	4-1	3-4	2x	+ 4-1	1-2	4-1
A	B	A	C		A	B	A
3-4	2-3	3-4	4-1	2x	+ 3-4	2-3	3-4
A	C	A	B		A	C	A
4-1	1-2	4-1	3-2	2x	+ 4-1	1-2	4-1
A	B	A	C		A	B	A
3-4	2-3	3-4	4-1	3x	+ 3-4	2-3	3-4
A	C	A	B		A		
1-2	2-3	1-2	4-1	4x	+ 1		
A	C	A	B		A		
2-3	3-4	2-3	1-2	2x	+ 2		
A	C	A	B		A		
3-4	4-1	3-4	2-3	1x	+ 3		
A	C	A	B		A	C	A
4-1	1-2	4-1	3-4	2x	+ 4-1	1-2	4-1
A	B	A	C		A	B	A
3-4	2-3	3-4	4-1	2x	+ 3-4	2-3	3-4
A	C	A	B		A	C	A
4-1	1-2	4-1	3-2	2x	+ 4-1	1-2	4-1
A	B	A	C		A		
3-4	2-3	3-4	4-1	1x	+ 3		
A	B	A	C		A		
2-3	1-2	2-3	3-4	2x	+ 2		
A	B	A	C		A		
1-2	4-1	1-2	2-3	4x	+ 1		

Hints On Weaving

For less confusion, use 4 shuttles, even if several wefts are the same color. A floating selvedge is useful on twill drafts. Keep warp more tight than usual, so weft packs well. Use a rhythm: throw shuttle, beat, change shed, beat. Leave weft loose in shed, even bubbling if necessary. Watch edges very carefully, for they draw in. Keep placing shuttles in sequence on the web, one behind the other, so A, B, C, and D colors are handy in order. To avoid extra bulk on edges, try to start or end wefts on alternate sides, rather than all on one selvedge. To make good straight edges it is essential to use a temple especially for rugs and wider fabrics.

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3. Frey, Berta, "How Many ways to Weave Honeysuckle?", The Weaver, Vol. IV, No. 4, 1939, pp. 11-14.
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Bits and Pieces

by Barbara Knollenberg

When working with handwoven fabrics for clothing we all have bits and pieces (scraps?) left over from the completed projects. I, myself, had too many basketsful to continue to collect them. Seldom is there enough leftover fabric from a piece of planned and used yardage to design another garment; however, with careful planning the leftovers can be pieced together to form enough yardage. The pictured jackets are the products of such planning.

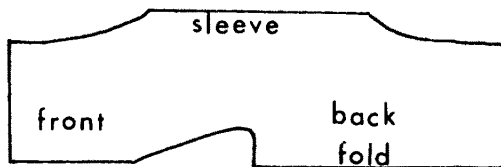


Fig. 1

The procedure is as follows:

1. Choose a simple pattern that needs few seams and has straight lines and no shaping details such as darts (Fig. 1).
2. With the available leftovers of the same fiber content, cut and patch together pieces to fit the pattern plus $\frac{1}{4}$ " seam allowance on each piece. The rounded shapes are the most difficult to design and sew together (Plate 2). Each jacket was made from one garment project leftovers.
3. Sew the pieces together with $\frac{1}{4}$ " seams starting with the large pieces which are best centered on the pattern. The patching need not be designed symmetrically, but contrasting colored and patterned or heavily textured pieces should balance as a design.



Plate 1



Plate 2

4. Cut lining (of similar cleanability to pieced fabric) and batting according to the whole pattern shape. Sandwich together the three layers with the batting in the center.

5. Hand baste through all thicknesses all the seams of the patching of the pieced top. Then hand baste around the edges of the entire jacket shape (Fig. 2).

6. Sew by machine through all thicknesses in-the-ditch (Fig.3) of each seam and $\frac{1}{4}$ " away on either side of the seam. This gives a neat quilted effect to the jacket. Sew together the underarm and side seams and finish them as self-bound seams (Vol. I, No. 1, page 26, Fig. 3).

7. Cut $1\frac{1}{2}$ " bias strips of any desired material, sew them together and press seam open. Form enough binding to bind sleeve, hem, center neck and front opening edges. Then bind these edges.

8. Make $2\frac{1}{2}$ yards of simple three strand braiding (like braiding childrens pigtails) from one of the dominant yarns of the handwoven fabric. Ply the yarns to get enough thickness from thin yarns. Secure the ends with one overhand knot and attach the braid to the jacket neckline with one overhand knot and attach the braid to the jacket neckline with fabric glue or invisible hand stitching. In the pictured jackets a finer three strand braid with knotted ends was applied to the shoulder line.

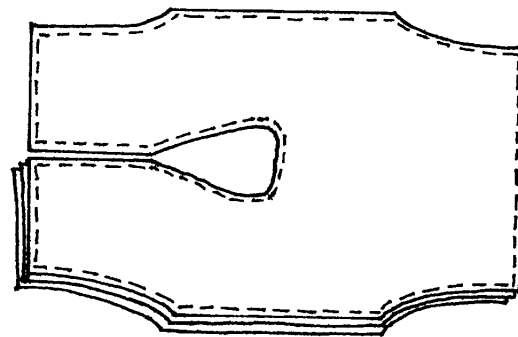


Fig. 2

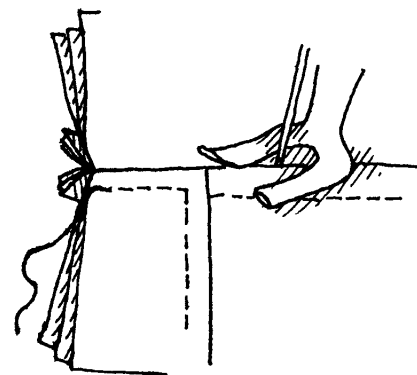


Fig. 3

This is not a quick-sew project but a very good exercise in garment fabric designing while practicing wise economics. Happy piecing!



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A Tubular Edge-Binding from Bolivia

by Adele Cahlander and Marjorie Cason

It is often the finishing touches that lift a weaving out of the ordinary. For inspiration, we can look to Bolivia, where a great variety of embellishments are used. The tubular edge-binding is among those that are not only decorative, but functional as well. It protects edges from fraying, and also holds the side seam on small bags.

This edge trim, or ribete, is a woven structure, with the warps held in place by a spiralling weft, which passes through the cloth edge on each circular route. During weaving, the weft is on a needle, so it can go through the edge of the fabric, and then pass from left to right through the warps for each new shed. Sometimes these tubes are woven without being sewn to a fabric edge, and are used as ties.

Although many of the ribetes are woven with patterns in a rich variety of colors, they may also be done simply in plain weave. We will describe the method for the simpler form. We suggest that you prepare a short sample to try the technique and help in choosing suitable yarns.

Preparing a Sample Warp. Because this weave is warp-faced, there is considerable take-up in the length of the warp. A length of about 18 inches is enough for this sample.

Place two posts about 18" apart, and wind the warp yarn around them in a figure-8. Each figure-8 is one bout (Figure 1). Wind eight bouts and tie the ends of your yarn together with a square knot. (If you would like lengthwise stripes, vary the colors of the bouts as you wind the warps). Tie a short cord around the warps at each post to keep them from separating if they should happen to slide off the posts in the following steps. Leave the warp on the posts.

Locate the warp-cross midway between the posts and enter short lease sticks (or a strip of rag tied in a circle), to hold the cross. Sit down at the unknotted end of the warps, and tip the lease sticks so they are parallel to the floor. The warps above the near lease stick are for

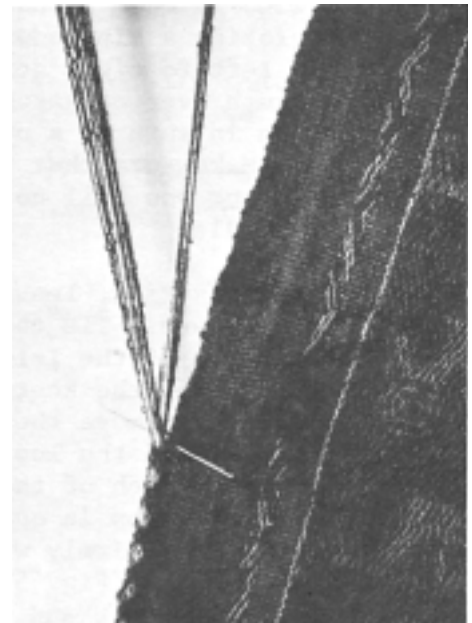


Plate 1

By threading the spiralling weft on a needle, the weaver can attach the ribete to the fabric edge as she weaves it. (Watson-Guptill)

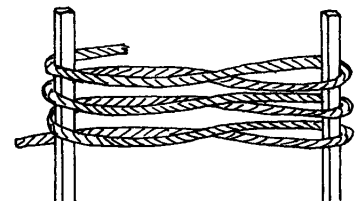


Fig. 1

heddle 1 (H 1), a multiloop heddle; those above the far lease stick are for heddle 2 (H 2), a simple shed loop. Using a double or triple strand of yarn for H2, tie a loop of about an inch or two in diameter around the warps above the far lease stick (Figure 2).

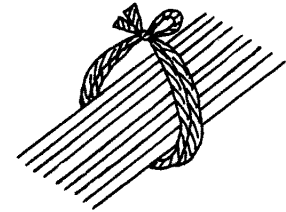


Fig. 2

For H 1, insert the heddle string from right to left under the warps that are above the near lease stick, positioning your hands as shown in Fig. 3. Using your right thumb, push the left warp to the left so it is under the first joints of the left two fingers. Lift the heddle string and wind it once around the left fingers, enclosing a single warp (Fig. 4). Working from left to right across the warp, continue to push over each consecutive warp, enclosing each in turn in a uniform-size heddle loop. Make sure that the warps are taken in order or you will not be able to operate the heddle.

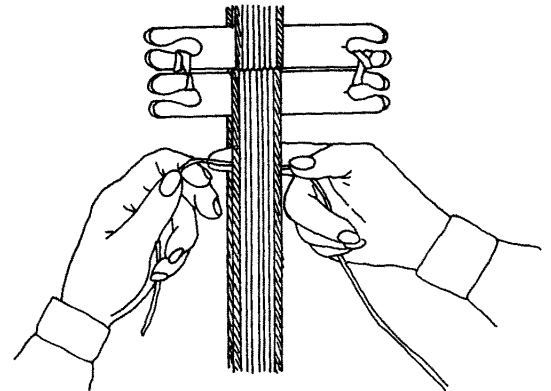


Fig. 3

Cut the heddle string, leaving several inches of extra yarn. Tie the ends in a square knot on top of the left fingers (Fig. 5a). Pinching the knot area with the right fingers, remove the left fingers from the loops. Bind the loops firmly together by bringing each of the ends through the center of the loops in opposite directions and tying very firmly with the first half of a square knot (Fig. 5b). Then complete the square knot and trim off the surplus ends.

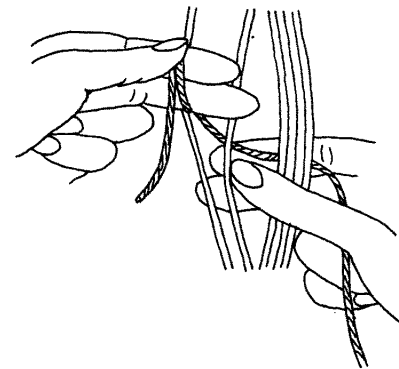


Fig. 4

Check your heddles by lifting H 2 to see if its warps can all be lifted through H 1 (Figure 6). If not, your heddles must be corrected.

Weaving the Edge-Binding. Find a suitable scrap of cloth to which the binding may be attached. Thread the weft on a needle and fasten it to a corner of the fabric. Having the far end of the warp tied to the post or other stable object, tack the near end-loops of your warp to the fabric edge with a few stitches.

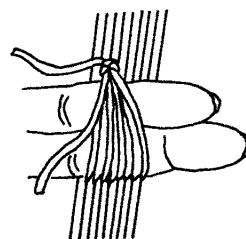


Fig. 5a

Hold the fabric with edge to be bound up, place your left index finger in the end-loops of the warps to provide

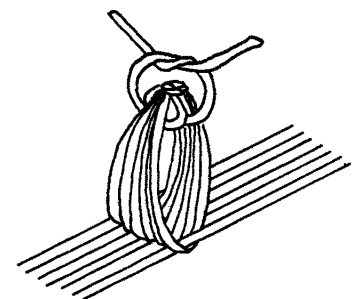


Fig. 5b

tension, and insert the point of the needle into the fabric from right to left, near the tacking stitches. Lift H2, remove the left finger and reinsert it into the new shed. Beat down and pull the weft taut, anchoring it under the left thumb.

Enter the right hand into the shed and grasp the point of the needle to pull it through the cloth, then bring it out through the shed to the right and reinsert the needle point into the cloth on the right side, just ahead of the last stitch. Pull the weft taut and anchor it again under the left thumb.

With the right hand, lift H1 to open the next shed and beat down, inserting the left index finger into the new shed. Reach into the shed with the right hand (Fig. 7), to pull the needle through the fabric, bring it out to the right, and reinsert the point into the fabric edge just ahead of the last stitch (Fig. 8). Pull the weft taut and anchor it under the left thumb. Continue, using alternate heddles.

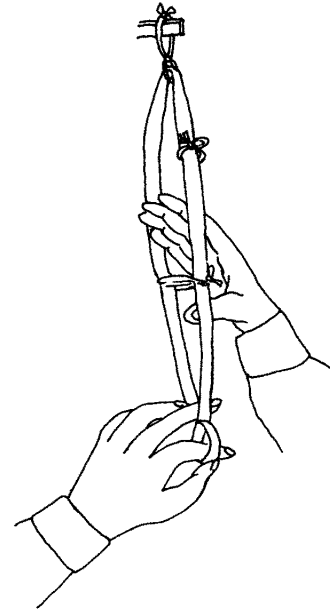


Fig. 6

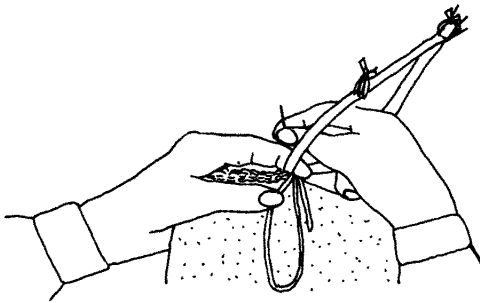


Fig. 7

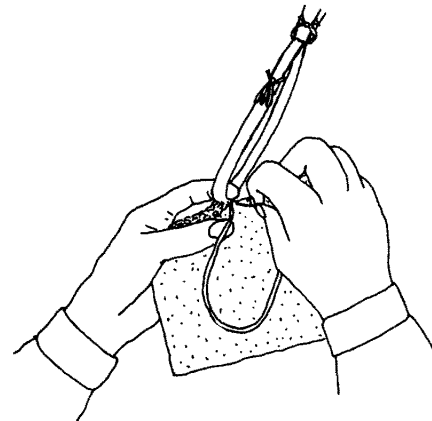


Fig. 8

Methods for weaving ribetes of various types are described in Chapter 4 of our book, "The Art of Bolivian Highland Weaving", Watson-Guptill Publications, 1976.



Plate 2

Sarah Weld combined her basketry and weaving techniques by finishing the edges of a set of coasters with Bolivian-style edge-bindings.

Woven and Other Textile Miniatures

Miniature houses, furniture, and accessories enjoy today a great popularity. The most commonly used scale is one inch to the foot. The advocates pride themselves on accuracy and detail.

In the field of fiber, this involves a study of fibers, designs, and colors appropriate to the period which is recreated in the miniature.

Scaling down a colonial coverlet is an exciting project for the handweaver. Good sources for full scale patterns are Davison's "A Handweaver's Pattern Book"¹ and Atwater's² "American Handweaving".

How to Miniaturize an Overshot Coverlet Pattern

Choose a coverlet draft, for example Double Chariot Wheels, Atwater² #86. The full repeat is given in Fig. 1.

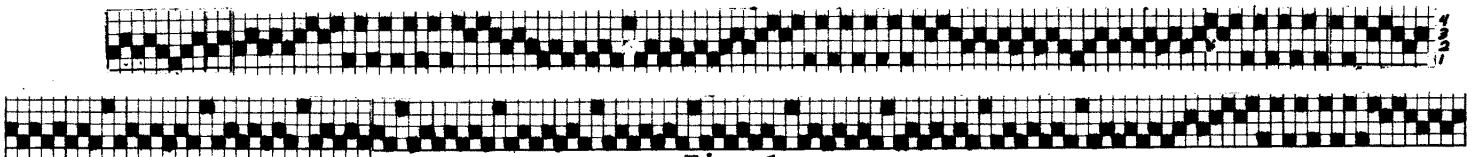


Fig. 1

Next, make a working profile of the draft by making A blocks for warp thread groups on harnesses 1 and 2, B blocks for warp thread groups on harnesses 2 and 3, C blocks for warp thread groups on harnesses 3 and 4, and blocks for warp thread groups on harnesses 4 and 1.

Fig. 2 is the working profile of the draft in Fig. 1.

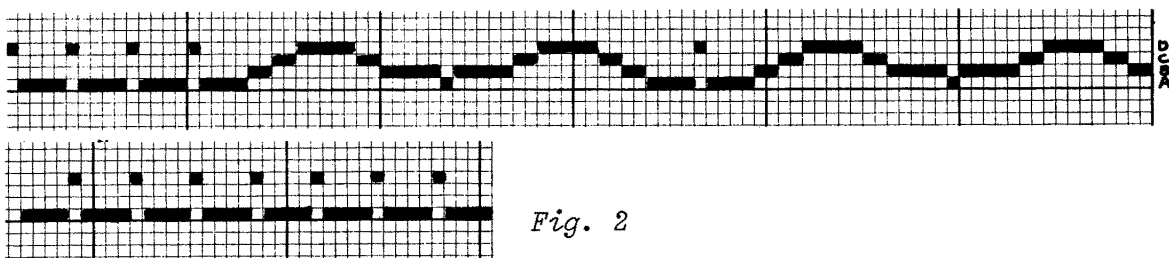


Fig. 2

The next step is to eliminate the blocks not essential to the overall design. In our example the pattern has a twelve block table. This has been reduced to a 5 block table for our miniature.

The blocks are then shortened wherever possible.

Fig. 3 shows the completed miniaturized working profile and the development of the pattern blocks for the new draft.

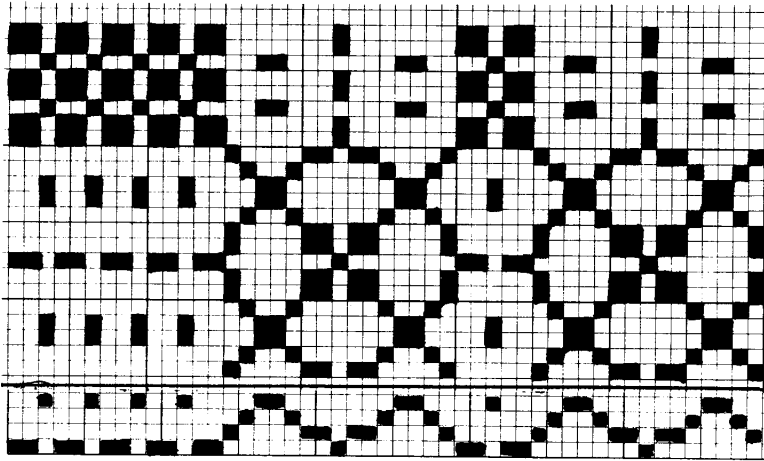


Fig. 3

Fig. 4 shows the thread-by-thread draft and the cloth structure of the miniaturized coverlet.

Fig. 5 shows the profile development and the thread-by-thread draft of Sun, Moon and Stars, Atwater² # 14.

Fig. 6 is a miniaturized "Orange Peel" Atwater² # 10.

Fig. 7 is a miniaturized "Star of Bethlehem" Atwater² # 110.

Fig. 8 is a miniaturized "Double Bow Knot" Atwater² # 115.

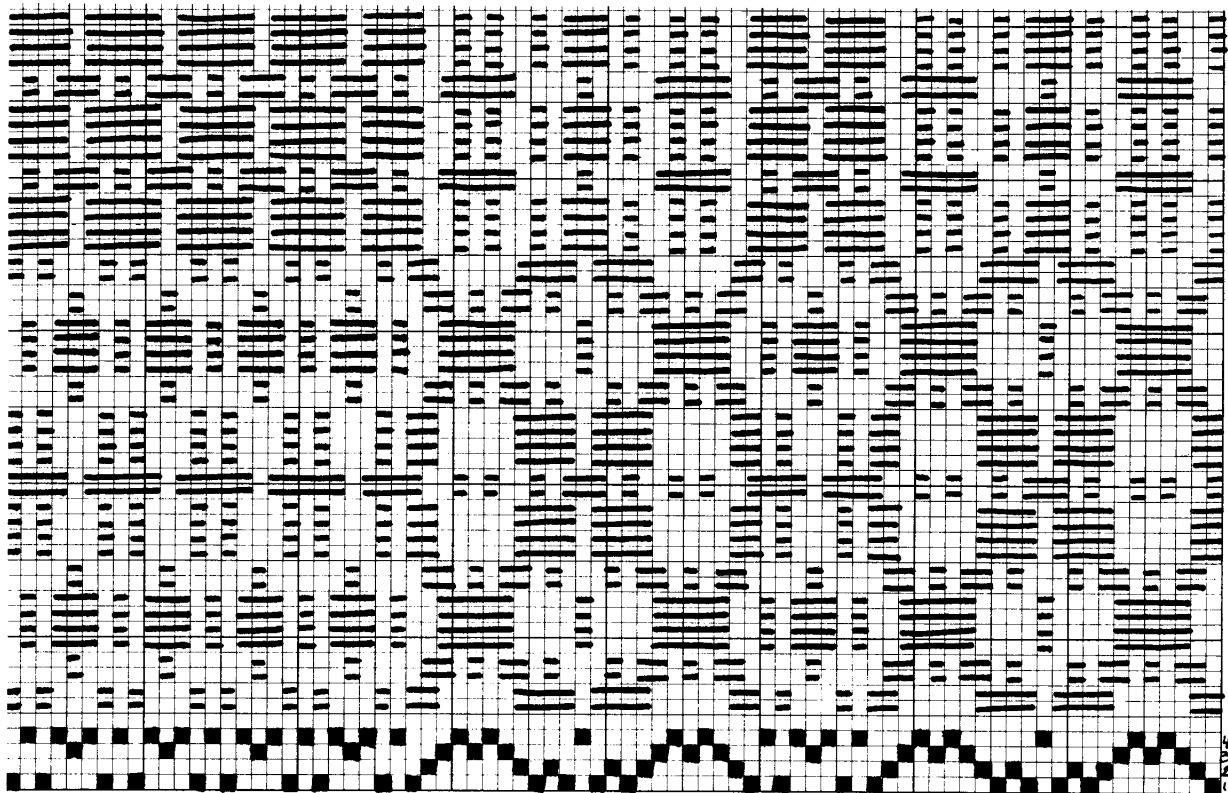


Fig. 4

<i>The Weaver's Journal</i>	
<p>2950 Pearl Street Boulder, CO 80303 (303) - 449-1170</p>	<p>Back issues and examination issues available at \$2.00 per copy.</p>

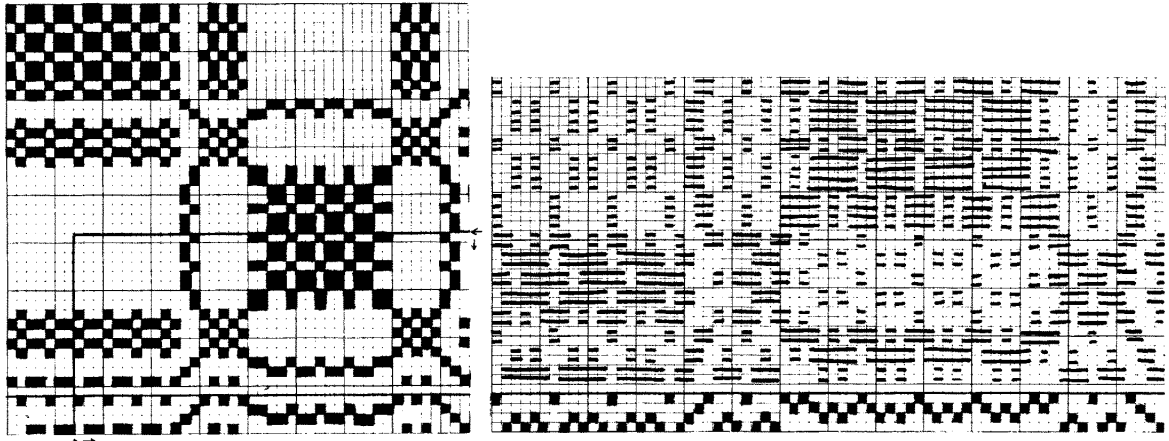


Fig. 5

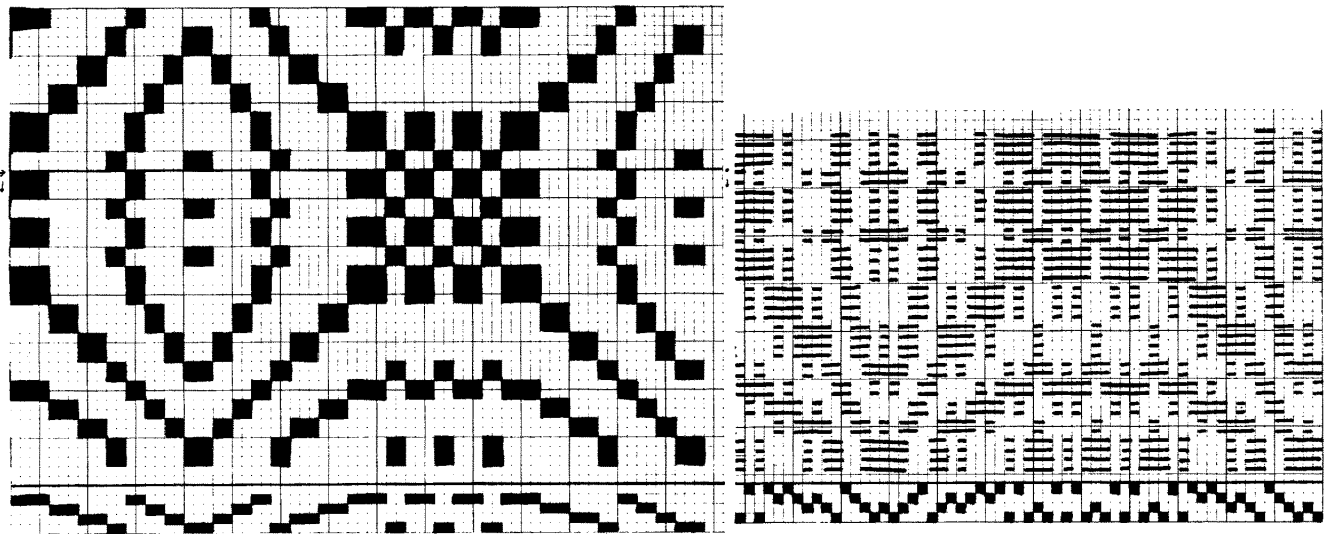


Fig. 6

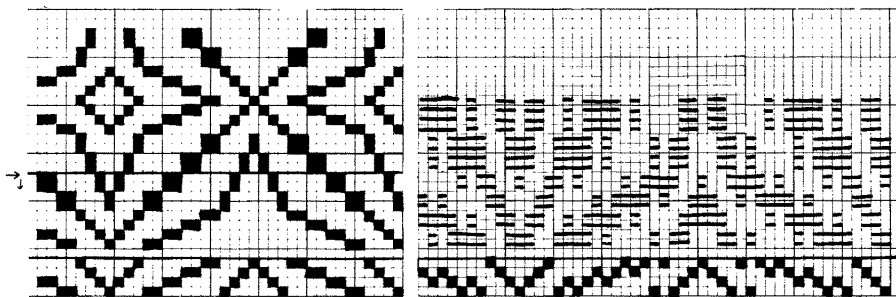


Fig. 7

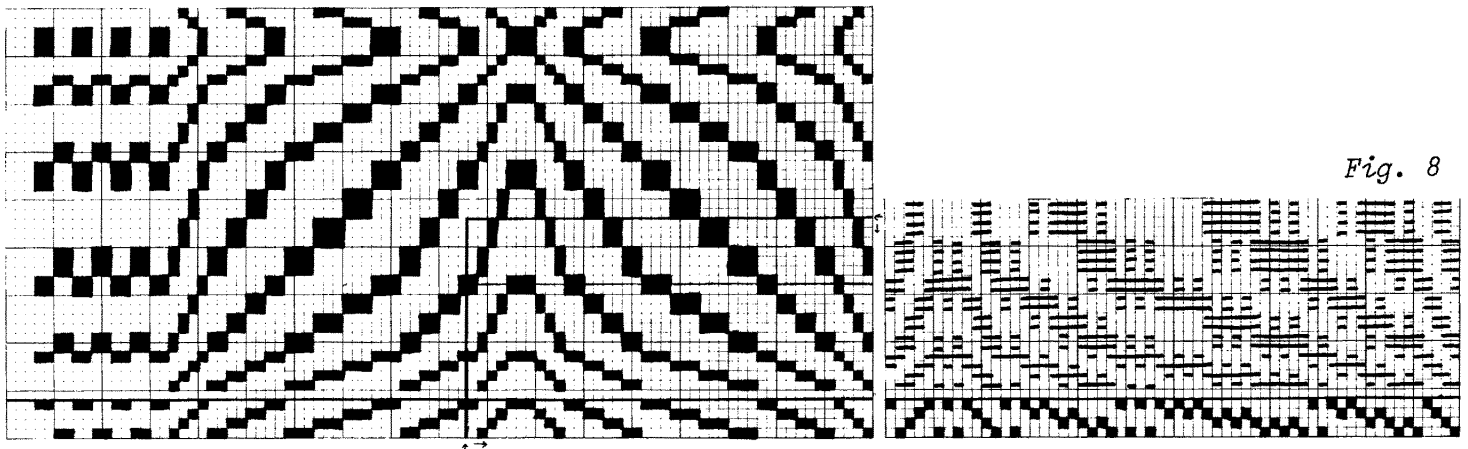


Fig. 8

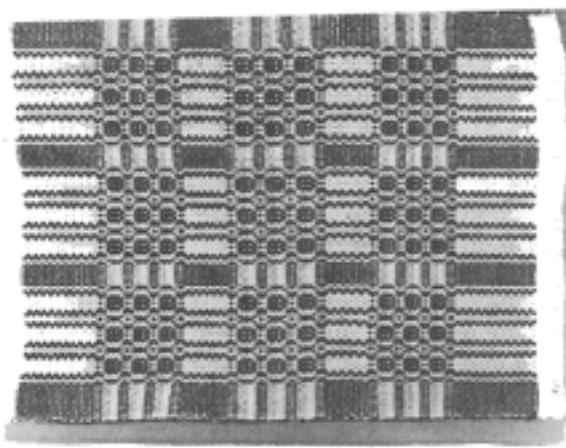


Plate 1

Coverlet woven by Barbara Taggart
 Miniaturized "Scarlet Bells of
 Alabama" Atwater² #57

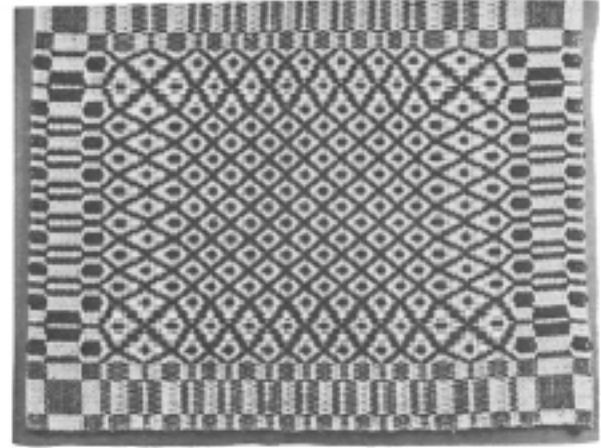


Plate 2

Coverlet woven by Barbara Taggart
 Miniaturized "Hancock Coverlet"
 Davison¹ p. 157

A good warp for miniaturized coverlets is a 50/2 off-white cotton set at 60 e.p.i. A good weft is 2-ply Willamette from Oregon Worsted Co. in rust brown or navy. The finished size for a double bed should be 8" x 10", for a single bed 6 3/4" x 8".

Other Ideas for Miniatures

Less detailed and coarser coverlets may be woven on point twills or over-shot twills. Suitable drafts are given in Fig. 9.

A good warp for these coverlets is a 20/2 cotton set at 36 e.p.i.

Plate 3 shows a fringed and a lace-edged coverlet woven by Zoa Stewart on a 30 e.p.i. warp, specially designed for a four-poster bed.

The rag rug and rya + plain weave rug illustrated in Plate 4 are woven on the same warp as the coverlet.

Plate 5 illustrates miniaturized coiled baskets by Mary Ann Nitchie.

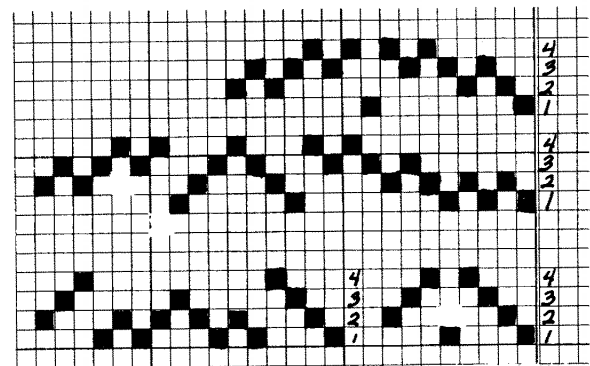


Fig. 9

Plate 6 illustrates a miniaturized coiled hot pad by Carol Strickler.

Plate 7 illustrates miniaturized needlepoint pillows by Zoa Stewart.

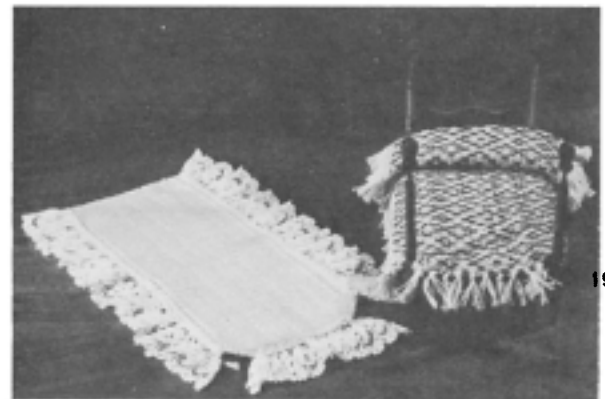
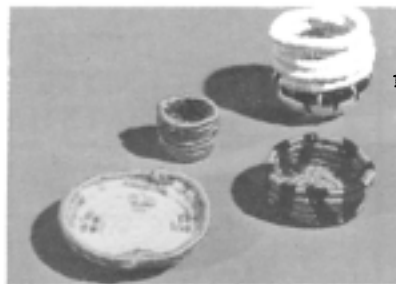


Plate 4↑ Plate 6↓

Plate 5↑ Plate 7↓

Plate 3

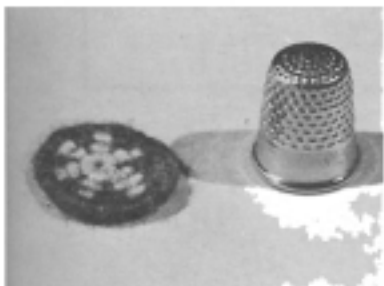




Plate 8

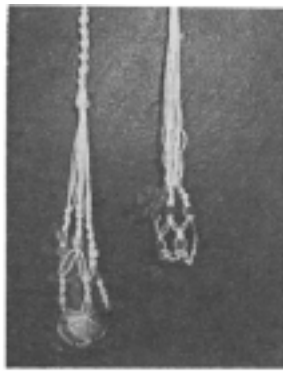


Plate 10

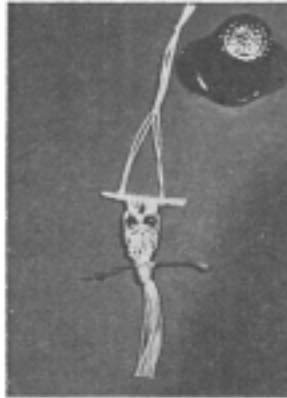


Plate 11

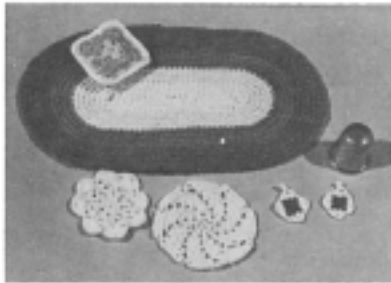


Plate 9

Plate 8 illustrates miniaturized upholstered furniture by Zoa Stewart. The furniture is made with small wooden blocks, spools, and bottle caps covered with needlepoint work. The seams are covered with trim or rick rack which has been glued on.

Plate 9 illustrates crochet doilies, potholders, pillow, and rug by Jeanne Richards.

Plate 10 illustrates macrame hanging planters by Zoa Stewart.

Plate 11 illustrates a macrame owl wall-hanging by Iris Richards.

The miniaturized drafts of Figs. 3 through 8 are by Carol Strickler.

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1. Davison, Marguerite P., A Handweaver's Pattern Book, Marguerite P. Davison, Swarthmore, Pa., 1944.
2. Atwater, Mary Meigs, Shuttle-Craft Book of American Handweaving, McMillan, New York, 1928.



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Mattor

by Miriam Dunham

The Mattor weave is a favorite of mine, especially when done in fine yarns. I'd like to share some of my discoveries about it. I hope one day it will be popular with American handweavers.

A. Description - See plate 1

1. Mattor is a warp-faced rep weave.
2. The warp is made of two colors alternating end by end and sett quite close.
3. On four harnesses, the color alternation can be arranged to form four blocks. These four blocks, however, are interrelated. There is an overlap in the woven blocks because two blocks always weave together. (Crackle has a similar block structure).
4. The weft consists of a coarse yarn and a fine yarn used alternately; this forms ridges parallel to the weft.
5. The fabric is reversible, the colors being reversed on the opposite side.

B. History

1. In Latvia, long runners of dyed linen warp with rag strips for the coarse weft were used in the homes because of their practicality, possibly since the 1800's. (Anna Smits, Minnesota Weavers Guild¹).
2. In Sweden, Mattor was a predominant rug type in the early 1900's. It disappeared around 1930, but returned to popularity in the late 1960's as mats for the bathroom or doorstep or as bedroom rugs, again because of their practicality. (Broden and Ingers²).
3. In America, Mattor was not very popular with hand weavers. (Atwater³).

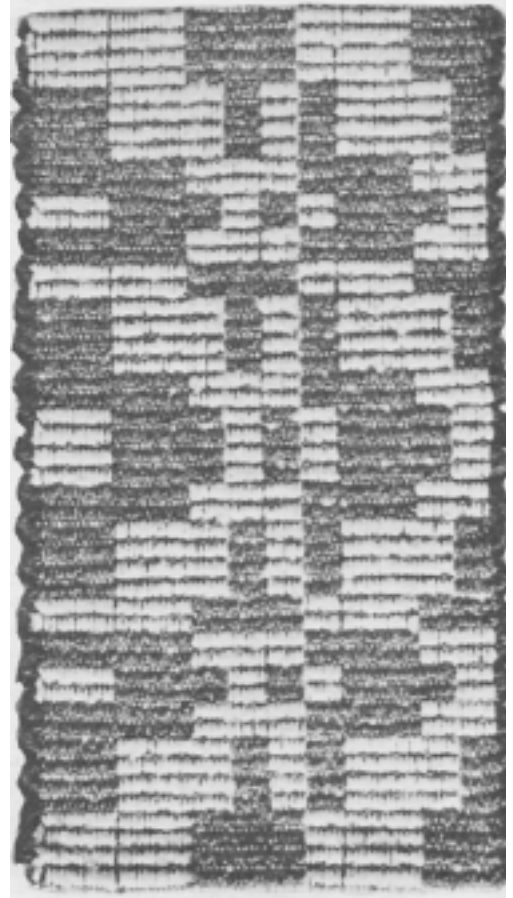


Plate 1
*Sample of 4 harness mattor
woven with textured warp*

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- Drafts for Mattor designs are found in Swedish, Norwegian, Latvian, and American weaving books, usually for rugs but also for upholstery.

C. Structure

- The warp is sett two to four times its normal sley with 15% to 20% of its length allowed for take-up.
- The threading for Mattor is: Block A: 1 dark, 2 light; Block B: 3 dark, 4 light; Block C: 1 light, 2 dark; Block D: 3 light, 4 dark; Solid Vertical Stripe: 1 dark, 2 dark. See Fig. 1.
- The treadlings for Mattor blocks are: Block A with B: 1-3 coarse, 2-4 fine; Block B with C: 2-3 coarse, 1-4 fine; Block C with D: 2-4 coarse, 1-3 fine; Block D with A: 1-4 coarse, 2-3 fine. See Fig. 1.
- The coarse weft shows along the selvages, and its color affects the warp color even at three times the normal sley.

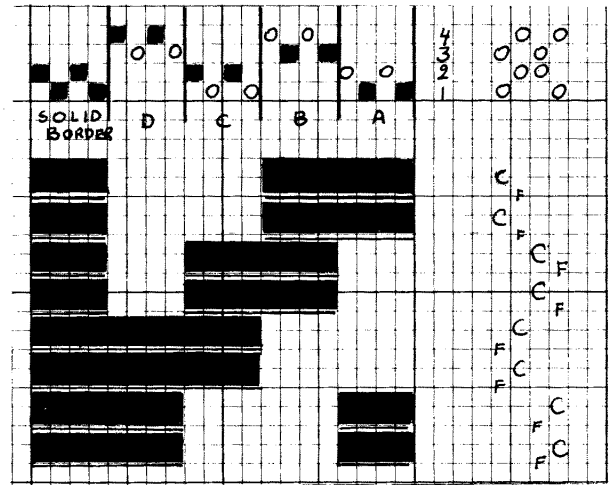


Fig. 1
 dark
 light
 F fine weft
 C coarse weft

D. Design

- Any block design which can be woven in Crackle can also be woven in Mattor.
- By placing each block on its own pair of harnesses you gain independent control of the blocks. In this case you need twice as many harnesses as you have blocks. The threading of Mattor may then be interpreted in a profile draft and block patterns may be designed as for the other weaves which use profile drafts. Plate 2 shows a four block plus border wallhanging. The profile draft is given in Fig. 2.



Fig. 2

- Maximum design freedom is achieved with the pick-up tapestry technique in which the weaver controls the size and the placement of the blocks by changing the sheds as desired while the coarse weft travels from selvedge to selvedge. See plate 3.

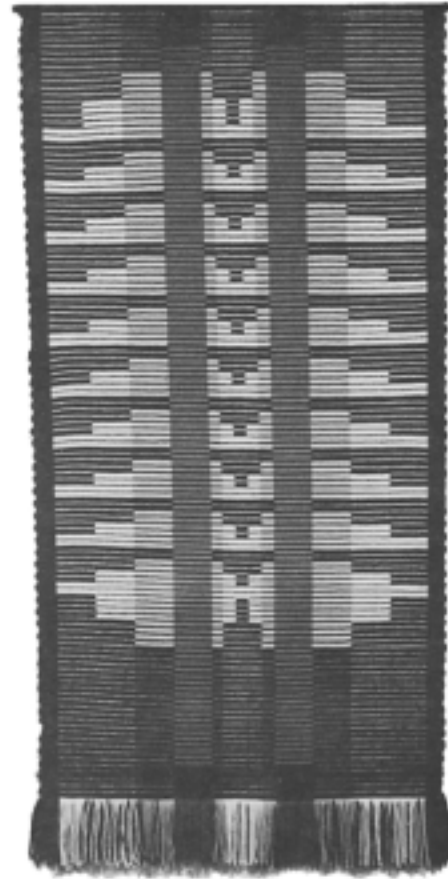


Plate 2

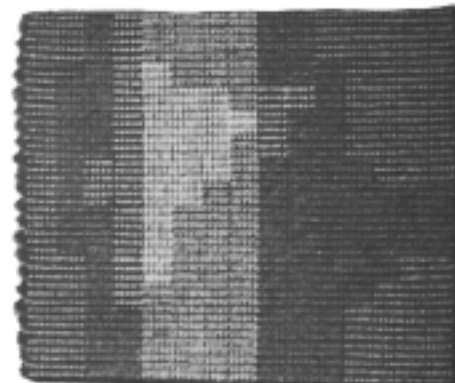


Plate 3

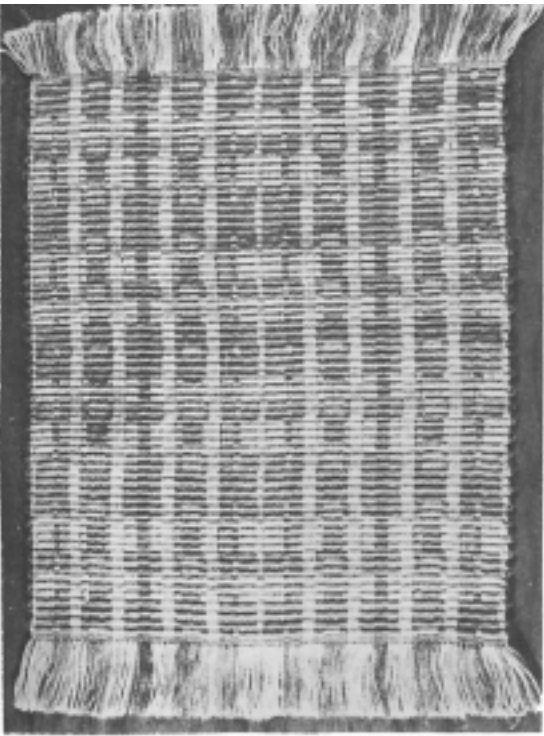


Plate 4

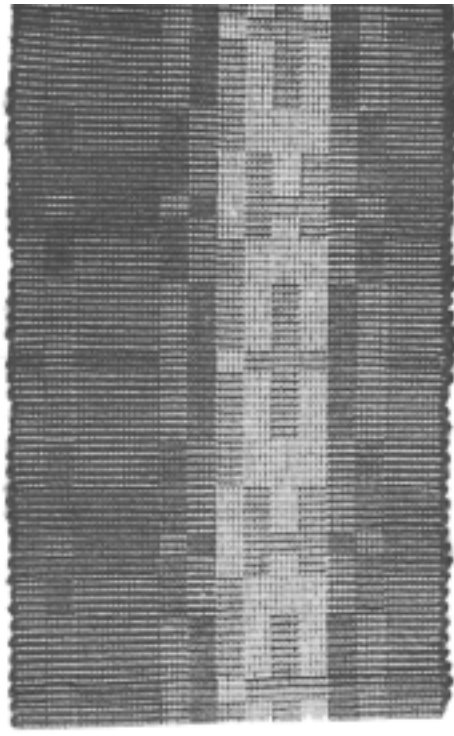


Plate 5



Plate 6

E. Warp Variations

1. When using three or more colors in the warp, for instance colors a, b and c, the design possibilities can be expanded by having the light/dark relationships of the colors vary with the blocks, e.g., substitute in block A: a for \circ , b for \blacksquare ; block B: c for \circ , b for \blacksquare ; block C: b for \circ , c for \blacksquare ; block D: a for \circ , c for \blacksquare . See Fig. 3, Plate 4.

2. When using three or more colors in the warp, the colors of the block can be designed by the placement of the colored warp ends within that block rather than by the threading of that block. See Fig. 4, Plate 5.

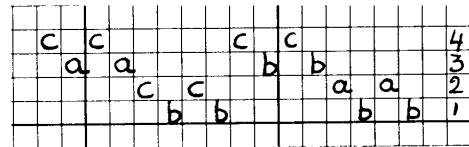


Fig. 3

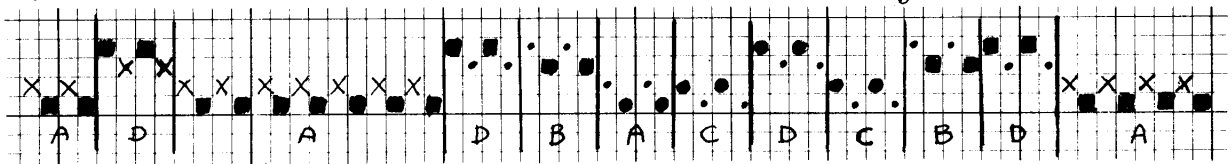


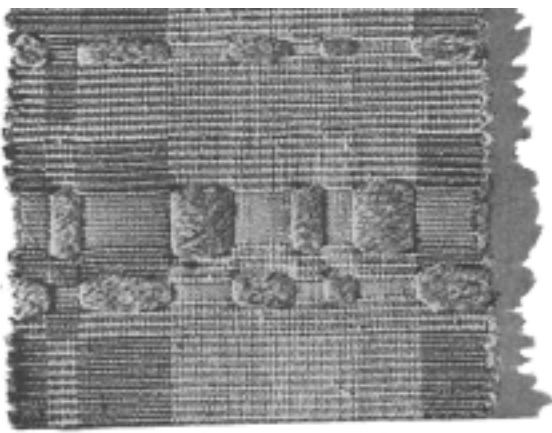
Fig. 4

3. Textured yarns can be used in the warp.

■ blue x purple ● orange • green

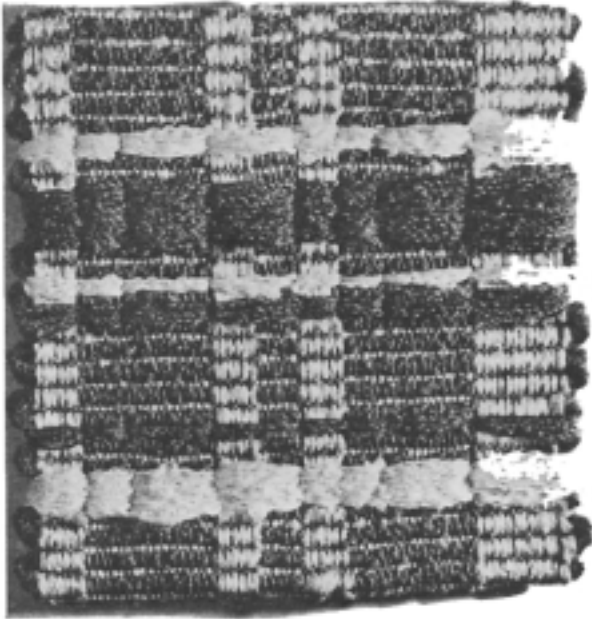
F. Weft Variations

1. The coarse weft can be allowed to extend beyond the selvedge edges as loops, using a fine yarn binder in every shed to keep the selvedge warp ends in position.
2. Very heavy coarse wefts can be introduced periodically as accents running selvedge to selvedge or inlaid for shorter distances.
3. Pine needles, flat sticks, or shaped sticks can be used as wefts extending slightly beyond each selvedge with a fine yarn binder in every shed to keep the selvedge warp ends in position. See Plate 6.



G. Treadling Variations

1. The treadlings for weft-faced blocks are:
Block A/C; 3-4 coarse, 1-3 fine, 3-4 coarse, 2-4 fine; block B/D: 1-2 coarse, 1-3 fine, 1-2 coarse, 2-4 fine. Plate 7.
2. Selvedge to selvedge weft-faced stripes are woven by treadling 1-2, 3-4. Plate 8.
3. Double weave on a mator warp: A tube composed of vertical stripes of warp-faced fabric alternating with spaced warp stripes can be woven by treadling 1, 1-2-3, 2, 1-2-4 (blocks A and C weave the upper layer and block B and D weave the lower layer). Intersecting layers along a horizontal axis can be similarly woven. Plate 9.
4. The treadlings for blocks of floating warp ends are: block A: 1-3, 1-4; block B: 1-3, 2-3; block C: 2-3, 2-4; block D: 1-4, 2-4. (Each block is a layer of fabric woven between two sets of floating warp ends). Plate 10.
5. Tucks can be woven as individual strips above a background fabric with these treadlings: Block A/C: Background: 1-2-3, 1-2-4; Tuck strips: 1, 2. Block B/D: Background: 1-3-4, 2-3-4; Tuck strips: 3, 4. Plate 11.



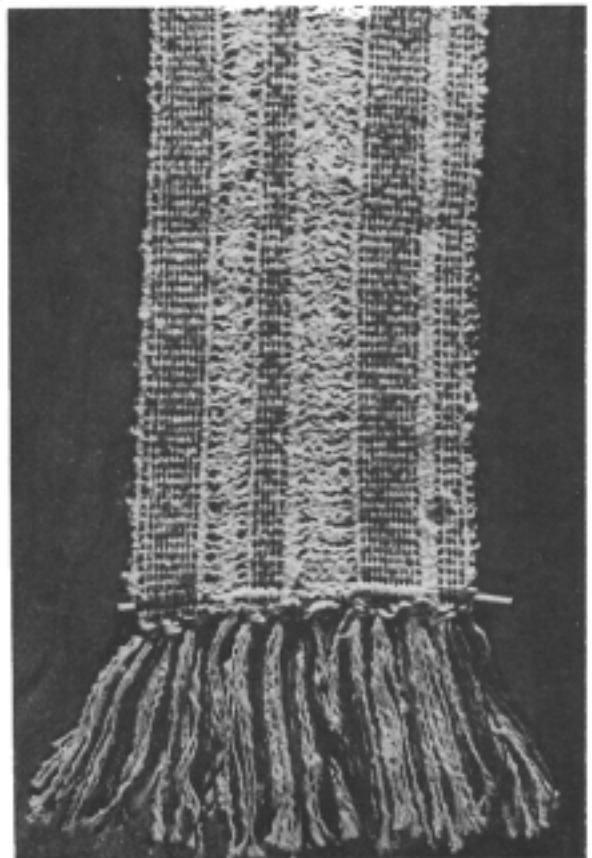
H. Contemporary Examples

1. Malin Selander has a sample of Mator as jacket fabric in Swedish Swatches, Red Series.
2. Ken Weaver, textile artist in Atlanta, Georgia, works with this weave, combining it with cut and uncut pile, in large decorative hangings.

The warp in the samples is 20/2 mercerized cotton, 96 e.p.i. except for the textured warp samples. Coarse filling is Aunt Lydia's Rug yarn, rug wool or 2/2 cotton. The fine weft is 20/2 mercerized cotton.

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1. Minnesota Weavers Guild, Minneapolis, Minnesota: Adele Cahlander, Harda Kuisk, Lila Nelson, Gerd Raich, Anna Smits.
2. Broden, Marta and Gertrud Ingers, "Trasmattor Och Andra Mattor" Västerås, Sweden: Ica-Förlaget, 1964, pp. 101-105.



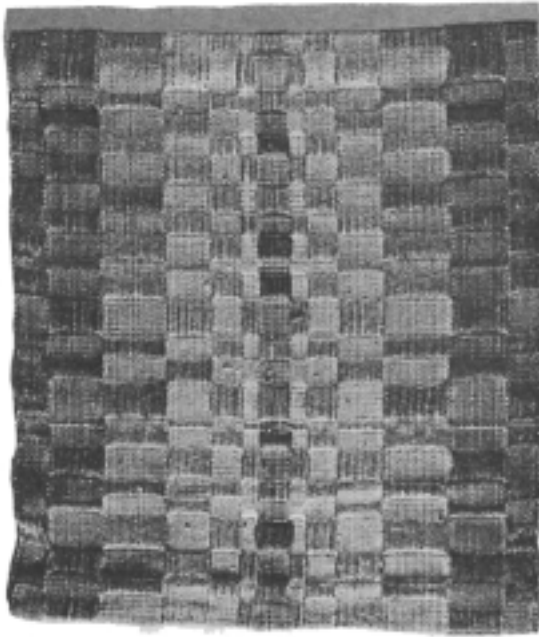


Plate 10

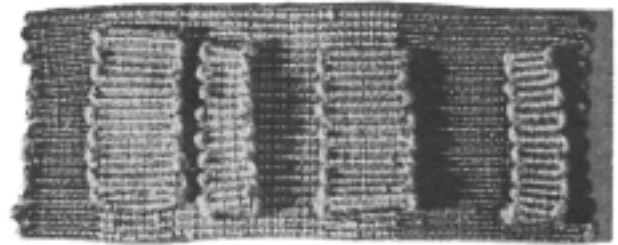


Plate 11

3. Atwater, Mary Meigs, "Hand-Woven Rugs", Shuttle-Craft Guild, 1948, p. 7.



Book Review *by Clotilde Barrett*

THE ART OF BOLIVIAN HIGHLAND WEAVING - By Marjorie Cason and Adele Cahlander (Watson-Guptill Publications, 1976) 216 pp., \$22.50. Subtitle: Unique, Traditional Techniques for the Modern Weaver. It is in the Bolivian Highlands that the tradition of a flourishing pre-Columbian textile production has been best preserved. With an amazing mastery of the techniques, use of natural or vivid color combinations and skillful adaptation of traditional designs, weavers in many rural areas of Bolivia, still today, weave their clothing and accessories.

Highland Bolivian weaving has been researched by scholars because it is the legacy of one of the richest art forms of the Americas. Highland Bolivian weaving has puzzled many contemporary weavers because the intricate designs are executed on very simple looms.

Marjorie Cason and Adele Cahlander, in their book "The Art of Highland Bolivian Weaving", give a lively account of the textile arts of these people today. The book is well illustrated with drawings and photographs. The authors describe regional costumes, weaving equipment and materials, color and design and give a classification of the weave structures encountered in Bolivian fabrics.

The weave structures, however, can only be understood by the reader who gets his own yarn and simple equipment and learns the Bolivian techniques himself. The major part of the book is devoted to teaching those techniques, and in most cases the authors base their knowledge on what they have learned first-hand from the natives.

Knowing that Bolivian weaving requires a great deal of skill, the authors have divided the text in chapters leading from "Learning the Craft", which is very elementary, to "Planning Your Own Projects". These step by step instructions and the clear diagrams enable anyone to follow the authors through the fascinating process of understanding Highland Bolivian weaving.

MEXICAN TAPESTRY WEAVING - By Joanne Hall (J. Arvidson Press, 1976, Helena, Montana) 156 pp., \$8.50. The technique of tapestry weaving used in Mexico and described in this book is used by many weavers throughout the world and is most suitable for tapestry rugs. It is done on a horizontal treadle loom. The weft is beaten into place by the reed. The change of color is produced by the "turned back weaving" or Kilim technique, for diagonal color joints, and with dovetailing for verticals and some diagonals. All the wefts go from right to left in one shed; they all return from left to right in the next shed. The technique is fast, rhythmical, and does not require that the patterns be graphed out.

Through step by step instructions and explicit diagrams, the author teaches the skills for weaving and designing patterns in this tapestry technique. If anyone is seriously interested in weaving good tapestry rugs, they will appreciate this highly informative book.

The fact that the author studied the traditions, the looms, the warping techniques, and the designs of Mexico, adds a fascinating ethnic and cultural interest to the book. The text, describing this Hispano-American tradition of weaving rugs and blankets in Mexico, is well illustrated with photographs. They show the equipment used, the weavers at work, sources for patterns and an abundance of examples of tapestries woven in the techniques described.

HANDSPINDLES - By Bette Hochberg (Bette and Bernard Hochberg, 1977, Santa Cruz, California), 73 pp., \$3.95. Anyone who wants to learn how to spin should start by learning on a handspindle. The student spinner will find that this delightful little book contains all the information to get started on the handspindle. The abundance of clearly drawn illustrations and the easy to read text gives the student a feeling that he has a teacher on hand who will guide him along.

The book contains descriptions and historical notes for the different types of handspindles, instructions for their use and a chapter on fibers and their preparation for spinning.

The more advanced spinner will appreciate this opportunity to learn more about the styles of handspinning but may wish that the survey could have been more complete. The author does welcome contributions and suggestions for future editions.

The chapter on preparing fiber (scouring and carding) is deliberately kept simple to suit beginning spinners and does not contain enough of the necessary information that a spinner should have on that subject.

The Vertical Loom (continued)- Construction of a Warp Weighted Loom

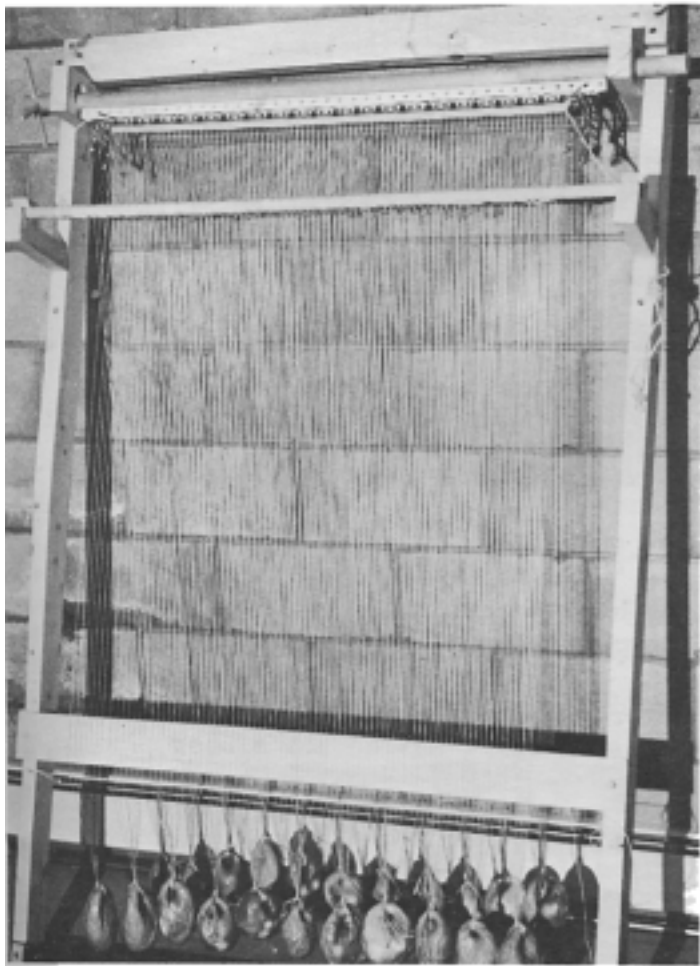


Plate 1

Pegs: 3/4" dowel (cut 4 pieces 3" long).
 Lease sticks: 2 pieces of screen molding 50" long.
 Loom weights: about 22 equal weights (1 lb to 2 lbs. each).
 The ones in plate 1 are made of high fired, salt glazed clay.
 Cotton cord for heddle cord and spacing cord.

Construction of a Warp Weighted Loom

Start out with the construction of the one beam loom described in "The Weaver's Journal", Vol. I #3, p. 21. Omit the feet. The frame leans against the wall. The loom is more secure if the uprights can be nailed to the wall or to a beam. The instructions for building a warp weighted loom are given only for the large loom model as it is impractical to set up a project on a smaller loom.

Additional Materials Needed

A heddle rod: a broomhandle, 48" long.
 A shed rod: a piece of 1 x 4, 48" long.
 An addition to the beam in which holes are drilled to lace on the warp: parting stop (3/4" x 1/2"), 41" long.
 Heddle rod supports: 2 pieces of 2 x 4, 8 1/2" long.
 Four woodscrews 1 1/4" long.

Construction

Drill a row of 3/16" holes in the parting stop, spaced about 1" apart. Screw the strip of wood to the round beam as shown in plate 2.

Shape the heddle rod supports by drilling a 1" hole in one corner of the 8 1/2" length of 2 x 4 and cutting or sawing away all the excess wood. See Fig. 1.

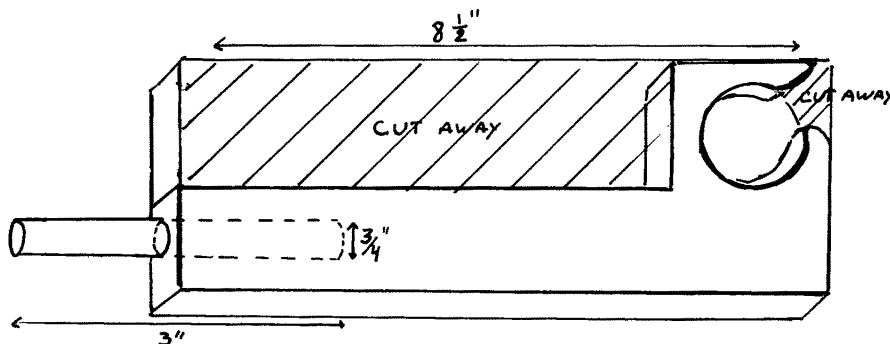


Fig. 1

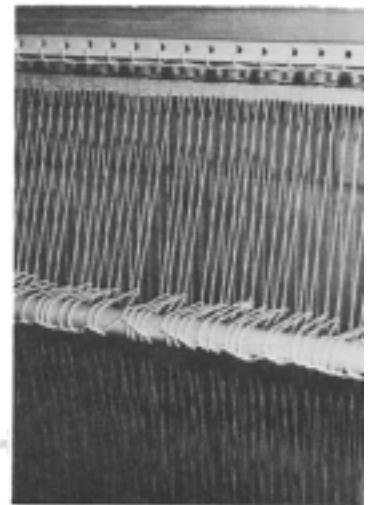


Plate 2

Drill a 3/4" hole, 1½" deep for one of the pegs.

Drill 3/4" holes 1½" deep in the uprights, every 4", starting 10" below the beam supports.

Drill a 3/4" hole at each end of the shed rod so that they match up with the holes of the uprights.

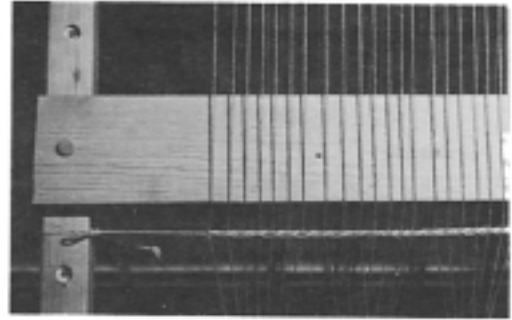


Plate 3

The method of suspending the warp from the beam described in this article, uses a woven starting border rather than a heading cord. (See "The Weaver's Journal", Vol. I, #3, p. 16, Fig. 1c). This starting border may be woven on an inkle loom, or any other belt loom, or may be card woven. Plan on weaving a band about 3' long.

For the project illustrated here the band is card woven with a tapestry worsted warp and the weft is 8/3 linen rug warp.

Plate 4 shows how the linen weft is carried around the pegs of a warping frame to measure off long weft loops on one side of the band. There are 5 picks to the inch. A tighter band of 8 or 10 picks per inch may be woven but then a complete loop will become one working warp end for the main fabric.

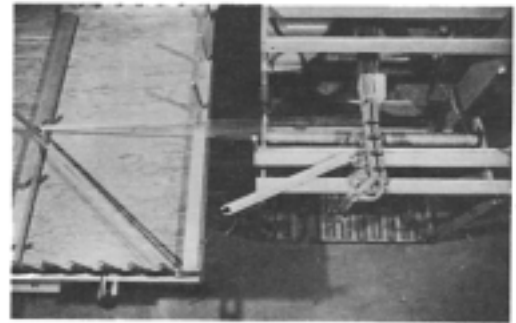


Plate 4

Setting up the Loom

Tie the fringes of the band to the beam stretching the band. With a blunt nosed needle and cotton cord, sew the band to the beam with a buttonhole stitch. See Fig. 2.

Insert one lease stick under all the odd numbered warp ends, the second one under the even numbered ends. Tie the sticks together and rest them on the heddle rod supports.

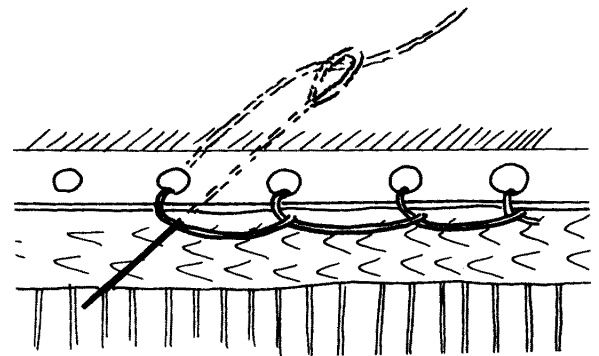


Fig. 2

Tie loom weights on the front layer of the warp in groups of 8 ends per weight, do the same for the back layer. The weights may be attached by means of a cord looped through the hole of the weight, using a snitchknot (see Fig. 3). The outer weights may be slightly heavier than the others.

Fig. 3

Chain a cotton spacing cord across the front and back layer of the warp. See Fig. 4. Slide these chains down and tie the ends of the front spacing

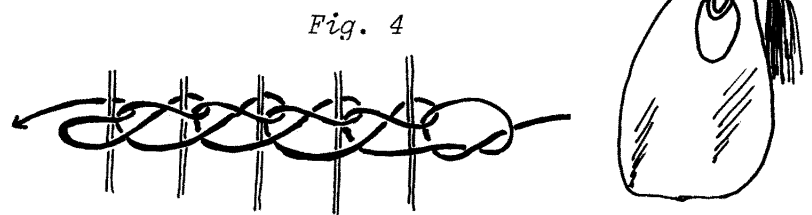


Fig. 4

cord to the uprights to keep the warps from drawing in during the weaving.

Insert the shed rod along the bottom lease stick and fix it to the uprights with two pegs: remove the lower lease stick. At this point the bottom of the frame should be unbolted and removed, because it stands in the way of the weaver.

To make the heddles, rest the heddle rod A on the supports C, 2½" in front of the uprights D, Fig. 5.

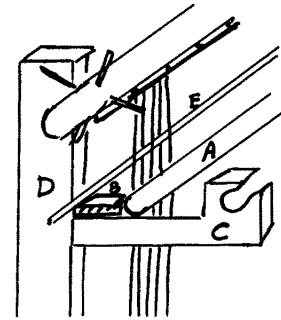


Fig. 5

Hold the rod in place with a small wooden block D. Tie the remaining lease stick E to the upright, just above the heddle rod support. Wind a cotton heddle cord on a small shuttle or cardboard bobbin. Tie the free end to the heddle rod on the right side. Make string heddle loops, catching each warp end that lies in front of the lease stick and wrapping around the lease stick; then bring the cord under the heddle rod and secure the loop with a half hitch (buttonhole stitch) as in Fig. 6. This knot lies on the side of the heddle rod which faces the weaver.

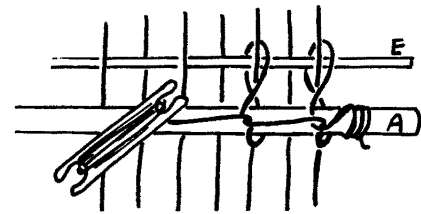


Fig. 6

Weaving

The weft yarn should be a rather thick loosely spun wool (single ply). One can use a finger shuttle or wind the weft on a lightweight stick by spiralling the yarn up and down the stick A, B, as shown in Fig. 7.

Pull the heddle rod and let it rest in its supports. Insert the weft. Push the yarn up with the fingers, with a pointed stick, or with a comb. Release the heddle rod. The lower shed rod forms the second shed. Insert the weft as before. Open the first shed again and beat both weft picks in with a batten or sword. Three models of battens are depicted in Fig. 8.

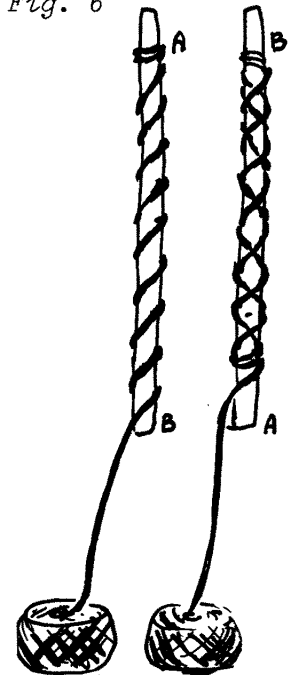


Fig. 7

The use of a temple (template, stretcher) is advised. It should be inserted just above the fell. As the weaving progresses, the heddle rod supports are moved downward to maintain a good shed. After a while the woven cloth will have to be rolled onto the beam and the heddle rod supports moved back to the top.

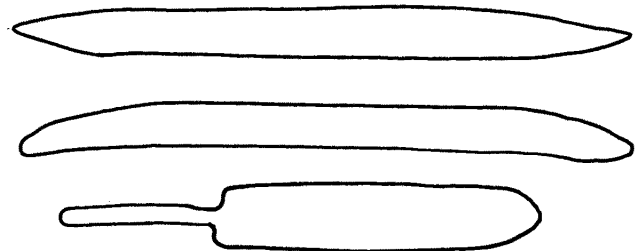


Fig. 8



Shadow Weave-Part IV.

The Relationship Between Shadow Weave and Corkscrew Weave

In Part II of the study on shadow weave we have discussed the weft face and warp face shadow weave. We have pointed out that warp face shadow weave is nothing else but "Mattor weave" but employing a different threading system. As much as shadow weave and mattor differ in appearance, they really have the same cloth structure; only the balance of weft and warp have been altered.

In order to study the relationship between shadow weave and other weaves one has to look at the broader class of weaves of which shadow weave is but a special case. This class is based on the manifold drafts: a draft where each twill line is formed by alternate threads. (Oelsner¹)

The twill lines may be drafted on an uneven number of harnesses. The drawing in of the threads of the first twill starts on harness 1, the second twills start on the harness number obtained by dividing the total number of harnesses by two and adding two to that number. For example for a 7 harness loom, the second twill starts on harness 5.

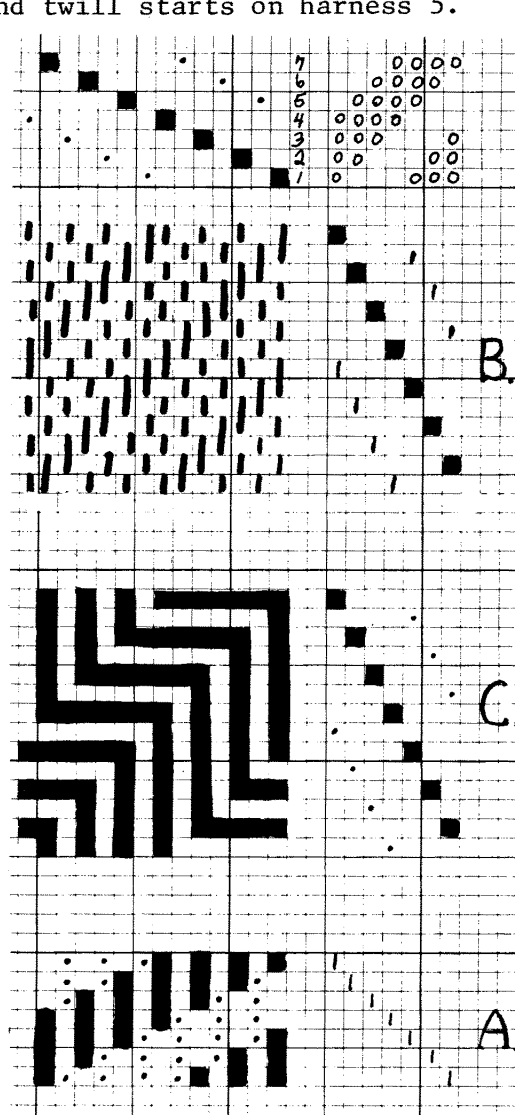


Fig. 1

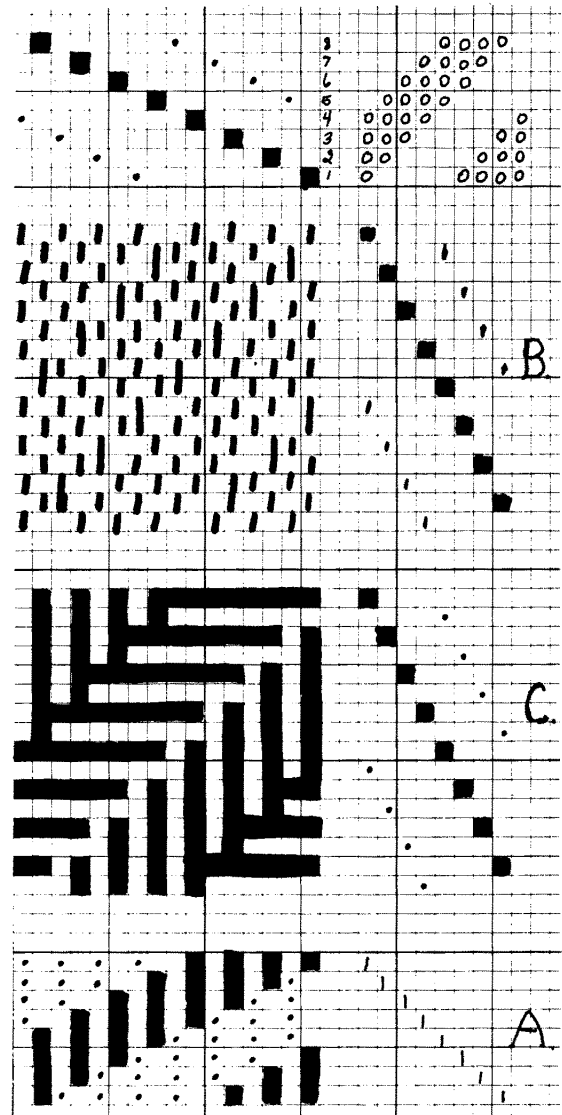


Fig. 2

Figs. 1 and 2 show the drawing in of a 7 harness and 8 harness manifold twill in which the warp is in end-on-end sequence (dark ■, light ●).

The tie-ups are those of a $\frac{4}{3}$ and $\frac{4}{4}$ twill, respectively. A shows the cloth structure for a twill treading. This cloth is called corkscrew weave. Its particular feature is a combination of two or more distinct twill lines which are here different in color. B and C show the cloth structure and the color effect when woven as drawn in. This 8 harness weave is a classic shadow weave; this 7 harness weave is a variation of shadow weave. The cloth structure in Fig. 1B shows twill lines formed by adjacent warp floats on a plain weave ground. The color effect (Fig. 1C) shows no "featherstitching" effect as with shadow weave on an even number of harnesses (Fig. 2C).

The weft face pick and pick effects of the draft in Fig. 1 are interesting and different from those woven on even numbers of harnesses.

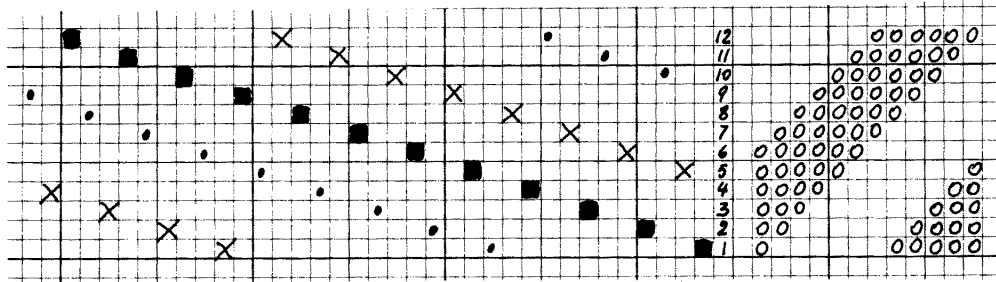


Fig. 3

Three twills may be combined in a manifold draft. Fig. 3 shows the first twill started on H_1 , a second twill started on H_5 , and a third started on H_{10} . The warp ends are in dark, medium, light sequence throughout.

The tie-up is for 6/6 twill. When woven on a straight twill treading the cloth is a corkscrew weave. When woven as drawn in, the cloth is an extension of shadow weave.

Corkscrew fabrics are usually predominantly warp faced, thus they are closely related to warp faced shadow weave. Both may be woven on the same threading. Any twill tie-up may be used for corkscrew weaves.

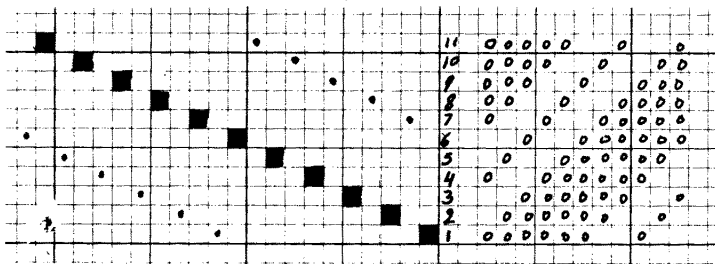


Fig. 4

Fig. 4 shows an 11 harness manifold twill with a $\frac{6}{2} \frac{1}{2}$ tie-up from which a corkscrew fabric may be woven.

When a corkscrew draft is turned about, so that warp and weft are interchanged (see Fig. 5 as compared to Fig. 2), the fabric becomes predominantly weft face.

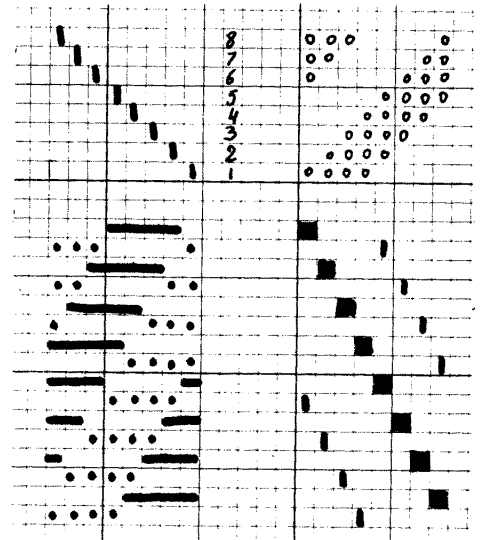


Fig. 5

The simple version of this technique is known to handweavers as "weaving on opposites".

A further broadening of the concept of manifold drafts is the system of interlocking twills. Examples are shown in Figs. 6 and 7.

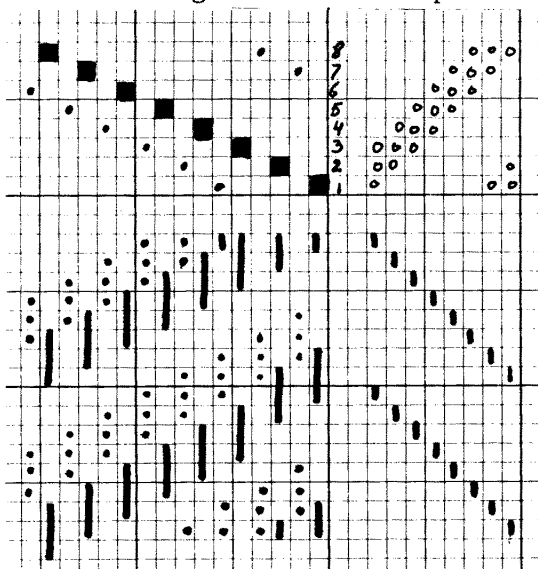


Fig. 6

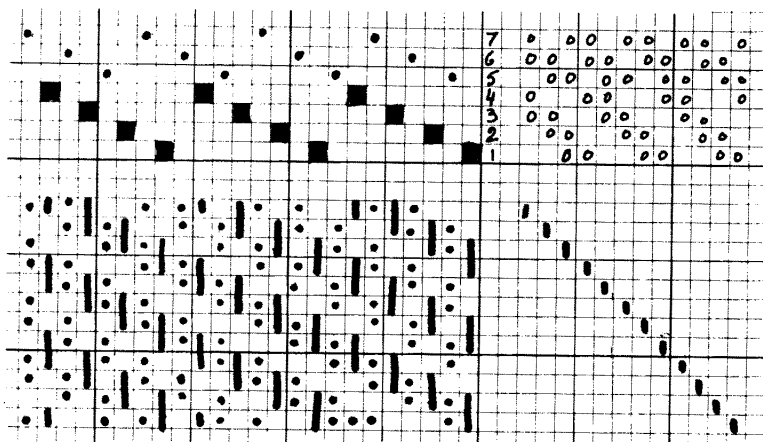


Fig. 7

Fig. 6 shows an 8 harness twill interlocking with itself. As in corkscrew weave or shadow weave, the second twill is the same as the first and is drafted on the odd number of warp ends, but in this broader system of interlocking twills, the second twill starts on a harness of the weaver's choice. Fig. 7 shows two different twills, one drafted on the even number of ends, the other on the odd ones. In this case there is an interlocking of a 2/2 four harness twill and a 2/1 three harness twill. When the twills are different, as in this case, each twill requires its own set of harnesses.

REFERENCE:

1. Oelsner, G. H., "A Handbook of Weaves", p.8, Dover, N.Y., N.Y.

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Huck and Huck Lace

Four harness huck-texture and huck-lace (also called mock leno) is traditionally interpreted by alternating two five-thread groups composing a ten-thread repeat. The ten-end threading for the huck pattern, the threading for tabby selvages and for stripes, the tie-ups, the ten-pick treadingling and the cloth structures are shown in Fig. 1.

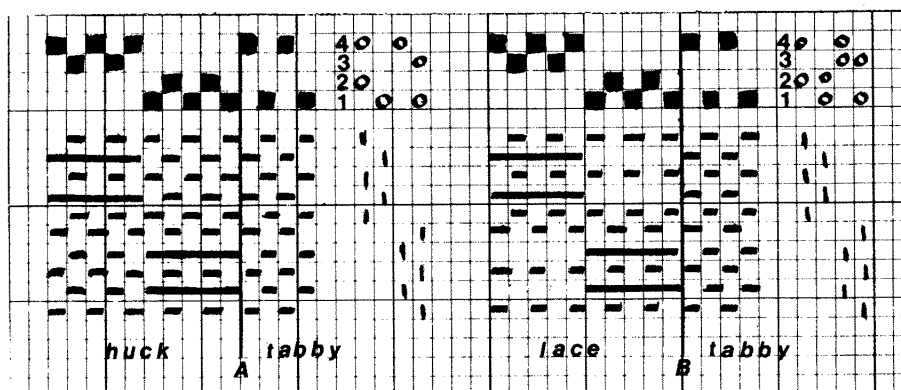
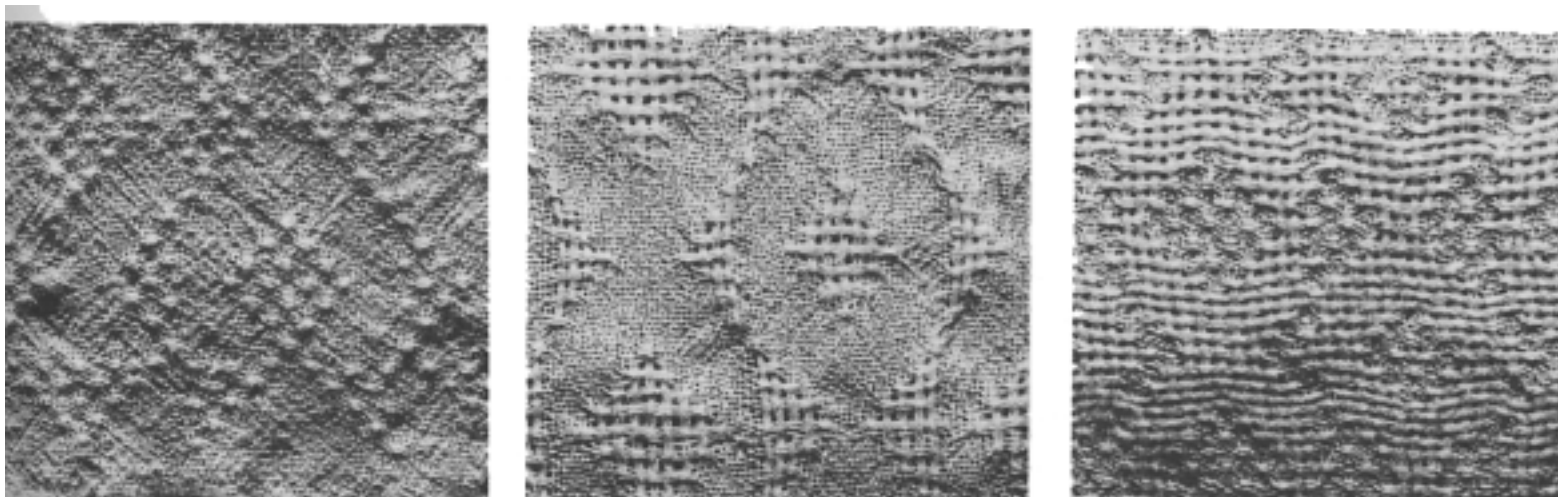


Fig. 1

The A draft produces an overall texture, the B draft produces an overall lace. Standard variations use a six-thread or a fourteen-thread repeat instead of the ten.

Multiple harness huck gives an opportunity for interesting designs. The ten-thread repeat becomes the basic unit for pattern blocks. Two harnesses, known as foundation harnesses, are common to all the units. In addition to the foundation harnesses, each unit also requires two pattern harnesses. Each unit may be threaded alone or may be repeated to form a block.

Three different cloth structures can be obtained and combined to form designs. They are illustrated in Plate 1.



a

b

c

Plate 1

- 1a. Design based on contrasting huck-texture and tabby.
- 1b. Design based on contrasting huck-lace and tabby.
- 1c. Design based on contrasting huck-texture and huck-lace.

In order to expand four harness huck to a multiple harness draft, the standard huck threading of Fig. 1 has to be rearranged as shown in Fig. 2.

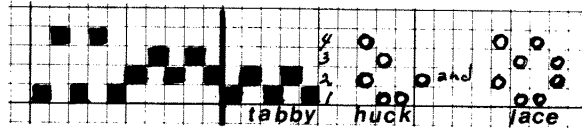


Fig. 2

Harnesses 2 and 4 have been reversed and the two five-end groups have been interchanged. Harnesses 1 and 2 are the foundation harnesses. Harness 1 is paired with an even numbered pattern harness, harness 2 is paired with an odd numbered pattern harness. This remains true when new units are added and more pattern harnesses are used. Thus, the threading for three units requires eight harnesses as shown in Fig. 3.

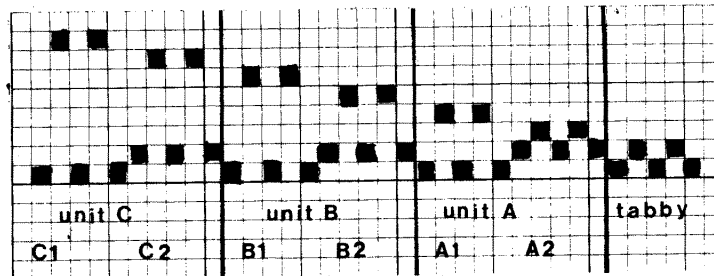


Fig. 3

For the profile development of the block weave based on multiple-harness huck we will subscript the half unit using harness 1 as foundation harness by 1 and the half unit using harness 2 as foundation harness by 2, Fig. 3. The 2 - 1 sequence of the subscripts has to be consistent throughout the draft. Consequently, at any point of the profile development where one wishes the threading to reverse, there has to be an omission of a half unit followed by interchanges of the half units, as shown in Fig. 4.

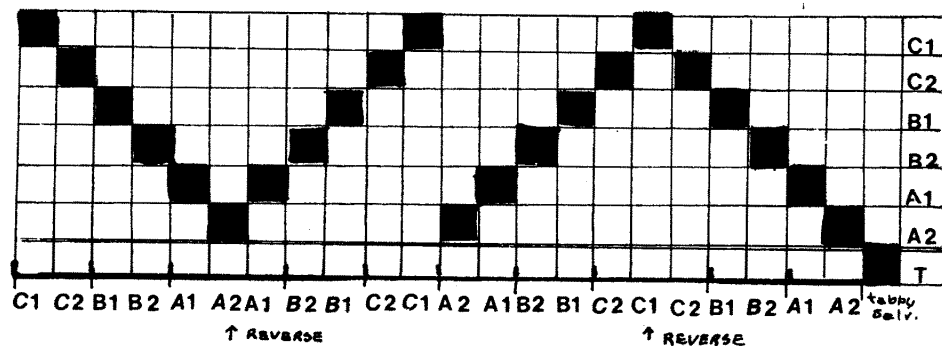


Fig. 4

The complete threading for Fig. 4 is given in Fig. 5.

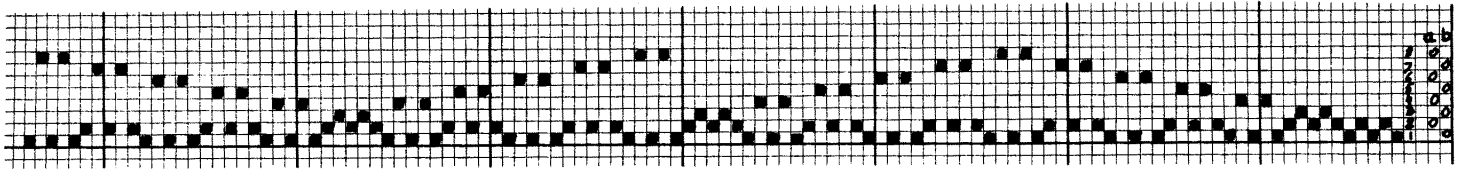


Fig. 5

The huck units also involve ten weft picks consisting of two 5-pick groups. The first group alternates 3 a-tabby picks with 2 pattern picks, the second alternates 3 b-tabby picks with 2 pattern picks. The sequence of alternating a-tabby groups and b-tabby groups has to be consistent throughout.

Fig. 6 shows the draft for a pattern of huck-texture with tabby. By reversing the threading and treadling, the pattern will form diamonds. The profile development of this threading is given in Fig. 7.

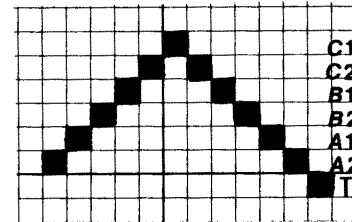


Fig. 7

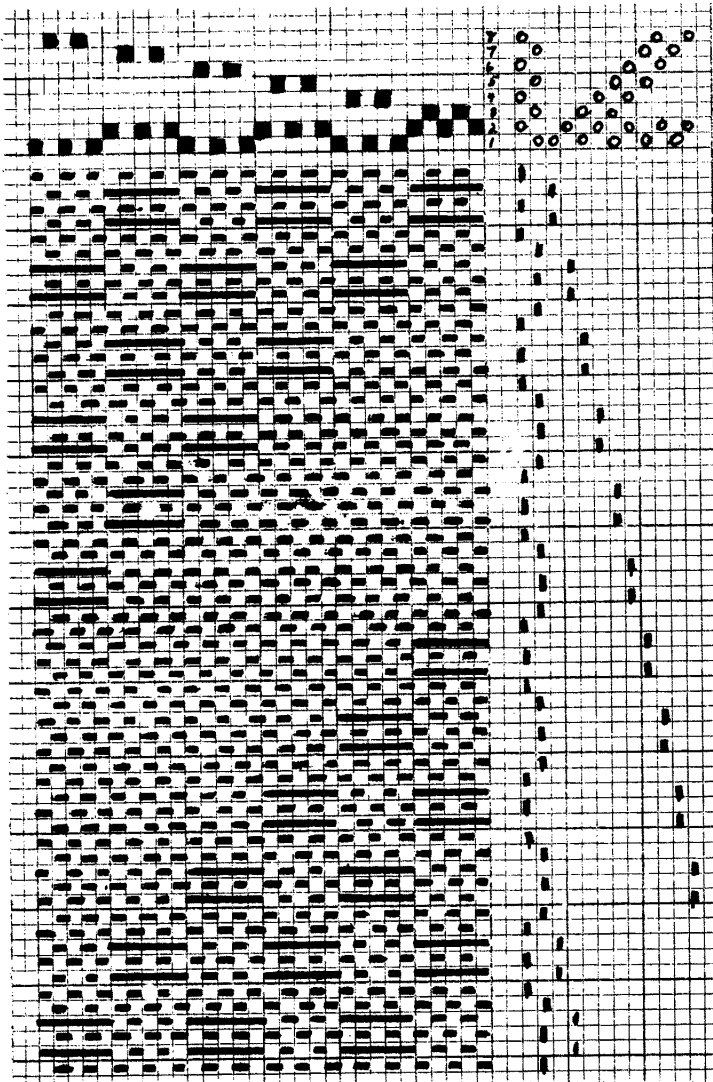


Fig. 6

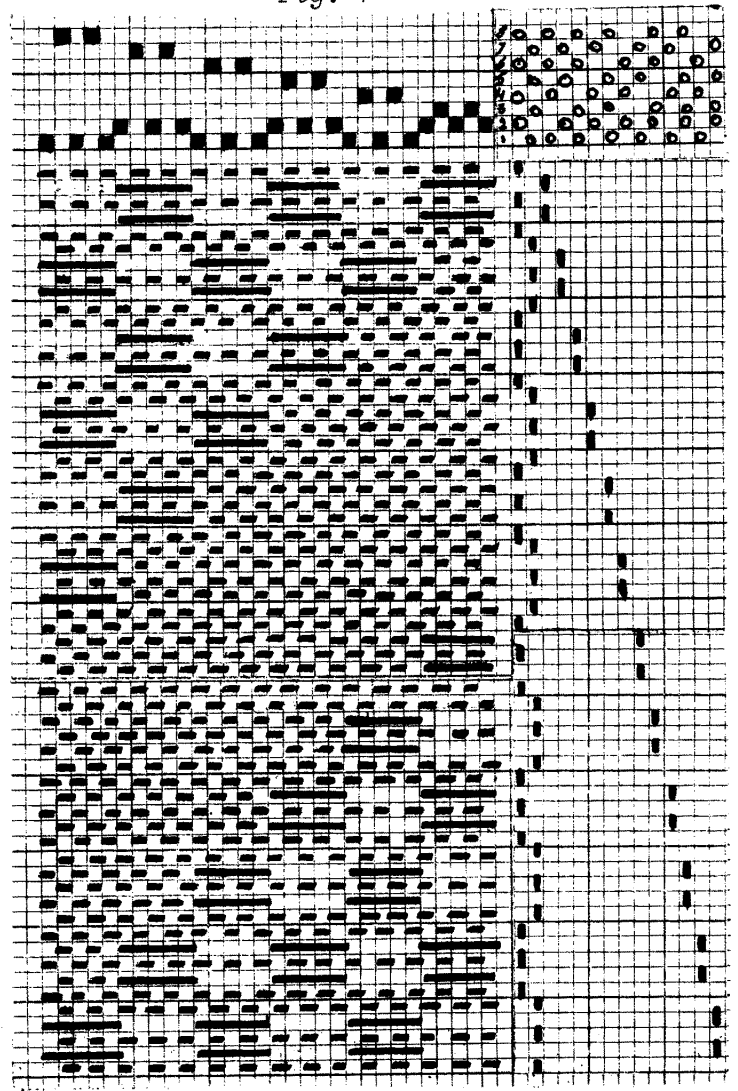


Fig. 8

Fig. 8 shows the draft for a pattern of huck-lace with tabby. Diamonds are obtained by reversing the threading and treadling.

Fig. 9 shows the draft for a pattern of huck-texture with huck-lace.

In each case the pattern possibilities for the given threading have not been exhausted by the tie-ups given. The solid diamond pattern is only one of the many designs for the threading of Fig. 7.

The fabric samples of Plate 1 are woven with fine alpaca set at 30 e.p.i. The threading is based on the profile development given in Fig. 4. The treadlings are variations of the ones given in Figs. 6, 8 and 9. The fabric has to be washed for the textures to show up fully.

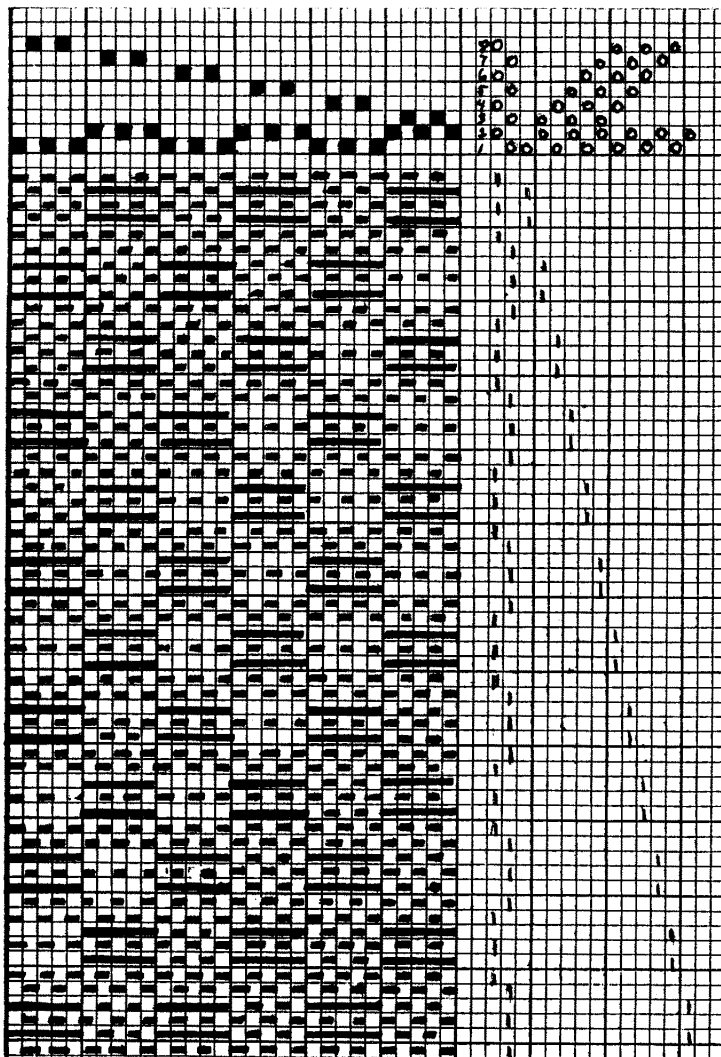


Fig. 9

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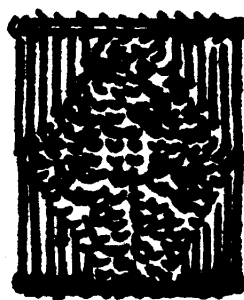
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