

# The Weaver's Journal

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Volume VII, Number 4, Issue 32

Spring 1984



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# The Weaver's Journal

Spring 1984

Quarterly Journal for Textile Craftspeople  
Volume VIII, Number 4, Issue 32

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*Cover photo: Rug by Richard Shultz, computer-aided design and woven with shaft-switching.*

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## LETTER FROM THE EDITOR

Every other year *The Weaver's Journal* sponsors a competition by inviting every weaver from all over the world to send us well written, well documented accounts of a handwoven project that turned out to be very successful and was the result of the imaginative and creative use of fibers and weaving techniques. The next competition will be announced later this year and projects will be due in April 1985. The winners and other top entries of the 1983 category of rugs are published in this issue. It is a very exciting series of projects and the exceptional quality made me wonder why rugs have become such favorites for which weavers are putting out their very best. A successful rug gives weavers a real boost to their ego by giving a sense of accomplishment and a permanent record of their creative endeavor.

Rug weaving has many virtues. The cost can be adjusted to any budget. The warp can be the best linen imported from Ireland or Scandinavia but it can just as well be ordinary cotton butcher's twine, used single or manyfold and which

is available in many types of stores and at various prices. When shopping, compare the price per yard or per pound, don't go by the size of the ball. The weft can be luxurious tapestry worsted dyed in colors designed by famous colorists, less expensive woolens, dyed or natural, inexpensive wool millends that can be dyed or overdyed if the original color is not quite right, some synthetics and blends if one is cautious enough to test them for suitability, and last but not least, recycled rag strips, yarns and thrums. Rugs come in all sizes and degrees of stiffness. Call them mats, blankets, throws, carpets, floor coverings, runners, even wallhangings; they all use similar weave structures and design techniques. However, the project must be compatible with the available equipment and material. Rugs are completely designed when they come off the loom. There is a special exhilaration when the cloth beam is being unrolled and the complete project reveals itself. At this time it will only need a few finishing touches. The design part is over with. A careful study of the woven projects and critical evaluation of a newly woven rug is the best weaving lesson a weaver can ever have. Each new rug should be based on the previous one and be an opportunity to apply everything that is learned.

Rugs bring coziness to the home and are a useful accessory for the interior decor. They provide texture, color and pattern. Rugs are functional and are appreciated as heirlooms. Rugs are forever!

This issue, although not exclusively on rugs, is dedicated to all rug weavers and especially those who shared their rug projects with all of us by entering *The Weaver's Journal* competition.

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W.J. — 4-84

# MAIL BAG

In response to R. L. Shep's letter in the Mail Bag (Fall, '83) re "A Handwoven Wedding Chuppa" (Spring '83), I did weave the Hebrew word for "peace" (Shalom), but it is along the opposite long edge of the chuppa and does not show in the photograph.

Explaining the chuppa to other weavers, family and friends, I was able to remember which word was which because of the letter that resembles "X" in the Hebrew word for "Love" (Ahavah). It reminds me of the "X" that stands for kisses at the end of love messages!

**Millicent Horger**  
Del Mar, CA

Have just opened my new Weaver's Journal and only got as far as your letter from the editor. Yes, Yes, Yes. I agree with you wholeheartedly. I would like to think I could keep on going to conferences instead of thinking, as I do now, that I have been to enough of them since they are so much alike. Good for you!

**Sue Shrode**  
Mt. Vernon, IL

I appreciated so much the fine manner in which you presented my article on multishaft overshot, and observed with gratitude the thoughtful editing changes. One transitional sentence, however, pointed out to me another weaving vocabulary problem.

The editors inserted "It is this last method that has been expanded to multishaft overshot" after my classification of four shaft overshot "types," referring to the four block on opposite threading and treading 12, 34, 23, 41. Actually, it is more (if either) Monk's Belt that has been expanded to 12, 34, 56, 78 (or multishaft overshot on opposites) where no blocks share threads. It seems obvious what a useless term "on opposites" becomes in multishaft overshot where no block is "oppo-

site" to any other. While "twill sequence threading" seems satisfactory for describing 12, 23, 34, 45, 56 etc., we need another term to accurately label multishaft "on opposite" threading. Adding shafts, we are changing them into qualitatively new identities for which we lack accurate terms—star and diamond weave? twill hybrid overshot?—and the need for care in order to communicate effectively seems even greater.

The *Weaver's Journal* performs such a valuable service for all of us in this area—again, thank you for all you do to encourage the growth of that communication.

**Madelyn van der Hoogt**  
Fayette, MO

Your efforts to clear up the terminology are most welcome. I will probably continue to use harness but will tell students that shaft is used in Europe and that some looms have both harnesses and shafts. I don't know anyone with such a loom but am getting interested, so maybe one day I'll have one.

When I read or write a threading draft, I start at the right and move to the left (unless the tie-up box is on the left, then reverse). I thread from the back of the loom and move right to left so the draft is easily followed. Although the weaving proceeds from the bottom to the top; in doing a drawdown, it seems easier to have the threading at the top and work downward. In any event, a certain ability to handle inversions and reversals would seem to be a part of weaving and no great impediment whichever way it is done.

I would resist the addition of new terms. Weaving literature is full of colorful terminology of poorly defined origin and meaning. It has a richness and warmth, a link with weavers of the past, but is often imprecise and confusing. If you can

help clarify the meaning of existing terms, that is wonderful, but please don't add another layer of jargon. I have appreciated and used your definition of boundweave, a term that was poorly dealt with in other sources.

Another area which I feel could use some insight is defining weave structures regardless of threading technique. An example is four harness summer and winter, a two block weave with a tabby produced by alternating 1-2 and 3-4. If harnesses 2 and 3 are reversed, the tabby is 1-3 and 2-4 and the two summer and winter blocks become the A and C blocks of crackle. The recent articles on four block summer and winter on four harnesses are really the four crackle blocks, just on different harnesses. Likewise Mattor and warface shadow weave seem to have identical possibilities but are just threaded on different harnesses.

I have been working on some lace weaves recently. They seem to have some logical relationships but the literature does little to clarify the problem. Foreign publications are increasingly available with more terms to muddle through. Fortunately the drafts seem to be a universal language and with your help, I've even managed to read a few words. Please keep it coming. The *Weaver's Journal* is not only a day-brightener when it comes, but a long-term friend.

**Carol Thilenius**  
Juneau, AK

As a very limited production weaver—mainly fabrics and rugs—I read your editorial with great interest and wished very much for the kind of "Indigo" meeting between the likes of us and the textile industry.

In regard to the increasing emphasis placed on the effect of the new computer technology in the field of handweaving in most weaving publications, I do see a basic split emerging between those weavers who embrace this new development with enthusiasm and who no doubt are in great need of a magazine devoted to that new aspect of weaving, and those of us who are of a less technical, more traditional inclination or who are unable to even consider these new wonders for economic reasons. Perhaps the time has come for two different publications? In the Winter issue I found two articles on 12 harness weaves, one on the counter-march loom and 2 on computer tie-ups, which makes me wonder how many handweavers own equipment that would make this information relevant.

I feel that the essential charm of

handweaving lies in the basic simplicity of the tools we use and the amazing diversity of expression we are able to achieve with them. I am glad I was initiated to the craft when that was all there was to it. What bewildering choices a beginning weaver must make today when reading through a present day weaving magazine.

**Ann Dumper**  
Olympia, WA

Please send me a copy of *Double Two-Tie Weaves*. I first learned of this weave during a workshop and find it absolutely fascinating. Unfortunately I only have a loom that handles 4 shafts. However, my loom is set up in such a way that I can easily manipulate pick-up sticks behind the shafts. I managed to convert one of the tie-ups of the above weave so that I only have to use 5 shafts (4 shafts and 1 pick-up stick in my case.) I put 1 and 2 threads in the first two harnesses—the twill part of the threading is on shafts 3 and 4 and #5 thread is on the pick-up stick. The threading sequence is as follows: 1, 3, 2, 4, 1, 5, 2, 3, 1, 4, 2, 5, 1, 4, 2, 3, 1, 5, 2, 4... repeat. You're probably aware of this already, but just in case you haven't tried it, I though I would include.

The tie-up requires 12 treadles (which doesn't really affect me as I can manipulate my shafts by hand as well as with treadles). However this is the tie-up:

tr #1 - 1,3,5	tr #7 - 2,3,5
2 - 1,4	8 - 2,4
3 - 2,4,5	9 - 2,3,4
4 - 2,3	10 - 2,5
5 - 1,3,5	11 - 1,4,5
6 - 1,5	12 - 1,3

I hope this information might help others who might be interested in experimenting with the "double two-tie weave" even if in a somewhat limited manner.

**Debbie Ott**  
Glenella, Man. Canada

I am sending two photos of my woven rugs which are like examples shown in *The Weaver's Journal*, Spring '83 issue, "A Quick Thick Rug." One is woven with three Berber yarns (three, which together are as thick as a very thick single of Berber roving), and the other with rags, broken up out of old threadbare plaids, which is suitable for a rug for dogs. Nowadays I am weaving a wall rug with very thin yarns. The pattern will be a Lance weave, (36 ends/cm!!!). Very difficult, but very captivating and exciting.

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My pet peeve:

When authors author instead of write,

When weavers heddle instead of thread,

When threads are dented instead of sleyed

And sett or dentage is used for "set" It makes me want to bite.

What makes people use nouns as verbs? And doesn't *sett* mean the thread by thread color plan for warping a tartan?

I really enjoy your magazine. Finally a journal for the technicians among us.

**Gwendolyn M. Watson**  
Canton, N.Y.

I have found your most recent issue particularly timely for our guild study group which is now concentrating on understanding the basics of loom controlled weaves. One of our members pointed out your article on page 11. As you will note on the enclosed outline, we are using it as a follow-up to put into practice what we have learned on paper. I am finding the reaction to this study outline a very positive one. There is nothing really new in it, but it just simplifies and clarifies and puts some orderliness into the many different approaches to drafting. If you know of any other groups who might be interested in sharing ideas on this, we would be very interested in making contact.

**Peggy Hoyt**  
Walla Walla, WA

*Editor: If you would like to contact Peggy, her full address is: 2022 Scarpelli St., Walla Walla, WA 99362.*

I have stayed out of the harness/shaft controversy, as I could care less who calls it what, as long as I understand it. So my pupils always hear me say "harness or shaft." But I cannot stay out of the "thread from right, thread from left" controversy.

How about Thread from Middle Both Ways? Once learned, it is so much easier than the others. I am speaking for sectional beam threading, but years ago I worked with a non-sectional beam table loom, just to get the experience of warping it, and did same on it with great ease. Advantages:

1. Heddles are divided about equally to both sides, so there is a balance when the threading is done.
2. No counting of patterns (on short forms especially, where repeats are given only once with notation '5 times', etc.). The decision is usually just what do I want for my center, then you fan out both ways and come out equally at the side, for borders, just stop where you want to and do the border.

To execute: Mark your center on the pattern, on right on the pattern to end, then start at center and go left to end. For a crutch, arrows can be put above the pattern.

3. This makes stripes, plaids, and tartans especially easy to warp and to thread on the sectional beam.

I was going to list disadvantages, but can't seem to think of any—probably because I have been doing this so many years. But I have helped others who didn't work from the center, so have some knowledge of the (usual) left to right threading.

My students appreciate your definite projects and practical ideas—a great way for them to have a starting point.

The Weaver's Journal is a delight to receive! Mail Bag is one of my favorite sections of the magazine, and I usually read it thoroughly first of all. Thank you for providing this forum for the lively interchange of ideas. The Winter issue was of particular interest to me as it shows an ongoing, healthy exchange of thoughts on terminology as well as methods. I have already cast my vote for "shaft" with supporting reasons. Now I would like to respond to some of the recent letters. . . .

On the subject of the direction to thread the loom, I would like to express two points. The first is that the resulting arrangement of warp in heddles is what really counts, no matter from what direction it was started. Second, I feel that left to right, right to left, front to back, and back to front are all valid choices depending on various circumstances.

It seems logical that right- or left-handedness may influence the ease with which one threads a loom using a particular method—with emphasis on method. I have tried many different ways, and I'd like to share examples from my own experience.

As a confirmed right-handed person, I first learned to thread from the right, holding four warp ends separated between the fingers of my left hand and drawing them one by one through the heddles with my right. As a letter writer has pointed out, these motions using the same hands would be working at cross purposes if threading proceeded from the left, but I believe a left-handed person might transpose the hand positions and motions very effectively for threading from the left if desired. This is certainly not the only way to accomplish threading. Another way works well from the left.

We often feel more comfortable

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with a familiar method than with a new one, and maybe this is why some weavers are reluctant to recognize the merits of other ways. I followed traditional methods for many years but did not feel restrained from experimenting occasionally in an effort to improve some aspects.

The threading method I now prefer proceeds from left to right. I am still right-handed, and the method assigns the active role to the right hand and a more passive function to the left. Here is how it works. To the right of a group of heddles to be threaded, the right hand grasps a handful of warp ends and also wields the threading hook. As the right passes to the left of the heddles, selects the first warp end in the cross and the lease sticks and then finds the appropriate heddle. The right hand relaxes warp tension (but continues to grasp the warp) as it inserts the hook into the heddle and draws through it the selected thread. Then the left hand pushes the threaded heddle aside to the left, and the process begins again for the next thread. The key to the efficiency of all this is that neither hand has to move very far, no time is wasted in setting down and picking up tools or using one hand to arrange threads on the other, and the order of the warp ends is much clearer and each end easier to find when they are pulled parallel under some tension than if left dangling. I have heard about a method like this taught by Janet Nyquist. I learned it from a friend who described it briefly over the telephone. After a little practice it seems extremely efficient.

About drafts—can't most of us manage to read a threading draft from either right or left? The important thing is to have the beginning and end of a repeat clearly indicated. Writing a draft seems equally easy from either direction by hand, but if you have ever used a typewriter to show how warp should be threaded you must know how natural it is to start from the left. Another minor justification for left-to-right drafting is that it flows naturally from the direction of accompanying text. It seems to me less important to criticize individual drafting style than to concentrate on accuracy and clear communication.

**Doramay Keasbey**  
Bethesda, MD

The Journal gets better and better. Even tho I've gotten involved in complex-multishaft, I still refresh and get ideas from 4-8, and your computer articles. I've a Macomber and so use Atari but basics are much the same.

**Dorothy Reichert**  
Park Hills, KY

I'm myself a weaver and I have a weaveshop with another weaver from Canada in the south of France. I got your address in a French magazine called "la Navette" or, "The weaver's shuttle."

I would like to know about sheep shearing because I would like to shear next year in USA and this for at least one year. Can you let me know if there's any possibilities for a French guy to shear and weave at the same time in this country and in which country it's possible to do it.

**Patrick Renaze**  
Plan d'Orgon, France

*Editor: If you know of anything that might be helpful to Patrick, let him know. His full address is: 761 Mas d'Hermes, 13750 Plan d'Orgon, France.*

It was certainly sad to read about your Earl W. Barrett having passed away. Will this mean that the interesting articles about computer weaving disappear in the *Journal*?

Personally I would miss them, since they have stirred my interest into buying a computer and taking a thorough course in data technique and programming.

**Elisabeth Wlassics**  
Sparreholm, Sweden

*Editor: We cannot at this time tell what computer articles, if any, there will be in The Weaver's Journal. We know that Earl hoped to arouse weavers' interest in computers with his articles. He would have enjoyed your letter very much.*

It is because I bought an old issue of *The Weaver's Journal* at Craft Industries in Houston that I found you. I was thrilled to read about the Quebec weavers as the rag is also my bag.

More on these talented people and also their counterparts in Louisiana—the Acadians. I collect Louisiana Acadian textiles and of course they were originally from Canada. It is indeed a small world.

**Joyce B. Olasky**  
Houston, TX

I am looking for new and different ways of turning sock heels. If your readers have any and could send them to me, I would, by return mail, send them someone else's. Thank you.

**Doryu Catina**  
P.O. Box 2896  
Petaluma, CA 94952

I have been reading your magazine since 1977—each issue gets better. This last one is "all things to all weavers."

**Margaret A. Hudson**  
Frederick, MD



# A FLEECY VEST

by Marilyn  
Gilsdorf

Jan Carter



This warm fur-like vest and matching sweater combine the latch hook technique, handweaving and knitting.

Start out by purchasing or by making a very plain straight vest pattern. I used a man's vest, Simplicity pattern #5350. Lay out the pattern pieces in order to figure out how much yardage is needed of latch hook rug backing. After each piece is cut, machine stitch a binding along all the edges.

To hook the vest, use a clean and top-quality short fiber lamb's fleece. Lightly scour the fleece, being careful to keep it in the locks as much as possible. Dry the fleece and use small amounts from different sections so that the entire vest is well blended. Sliver the locks down into small fiber bundles for the hooking.

Work each pattern piece separately. The hooking is started at the top of the piece and each row is worked across. The table supports the weight of the finished part.

The weft of the handwoven lining and the matching knitted sweater is handspun wool from a batt that has been "rainbow dyed." The warp of the vest lining is a 3/12 wool worsted. The sweater is knit-

ted with a strand of 3/12 wool warp yarn and a strand of handspun used together as one thread. It is knitted with a rib type pattern and a turtle neck.

## VEST LINING

**Warp:** 3/12 wool worsted, color dark green (Nehalem from Oregon Worsted Co.).

**Weft:** single wool, handspun from a rainbow-dyed batt (Straw into Gold).

**Sett:** 12 epi.

**Threading, treadling and tie-up:** standard  $\frac{2}{7}$  twill.

*ABOUT THE AUTHOR:* Marilyn Gilsdorf is a spinner and weaver in Phoenix, Arizona. She is married to a surgeon and has five children and lots of animals. She says she is basically a yardage weaver for which she spins the weft. ■



1. "Mystery Sun Rug"

## MYSTERY SUN RUG by Jerry Oles

Here is an interesting way to make a colorful rag rug (see Photo 1). You will need about twelve yards of 45-inch, lengthwise striped fabric for a rug about 34 inches by 56 inches. I used light weight denim, left over from an ancient drapery/slipcover project (see Photo 2).

The denim has five colors in stripes of orange, nutmeg, vanilla, beige, and brown. The width of the five-color repeat is a little over two inches. I cut my strips lengthwise with the stripes which serve as a built-in cutting guide, encompassing one repeat of about two inches in each strip. I kept the orange on the *outside* of each strip. To make the cutting and joining of the strips go more rapidly, I sewed a four-

yard length of fabric into a circle by mend-stitching the two ends together with one stripe staggered (see Fig. 1). This enabled me to cut around and around the four-yard circle to make a long continuous strip of weft.

I made my warp using 8/4 cotton carpet warp in three colors to match the stripes: vanilla, nutmeg and brown. I threaded a double rosepath threading on my eight shaft loom.

**Warp:** 8/4 cotton carpet warp, colors vanilla, nutmeg, brown.

**Width in the reed:** 36" (.91 m).

**Sett:** 5 working ends per inch (20/10), each warp end is used two-

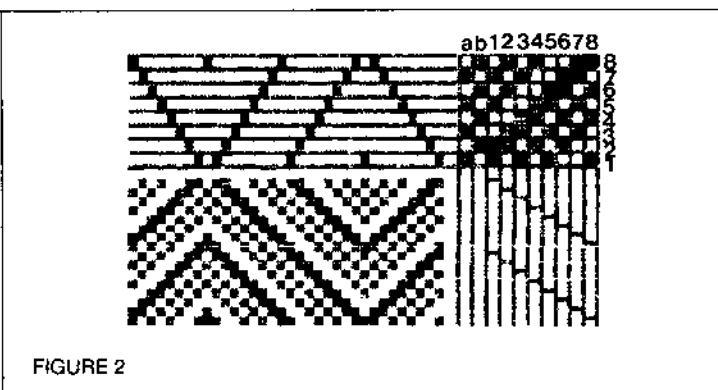
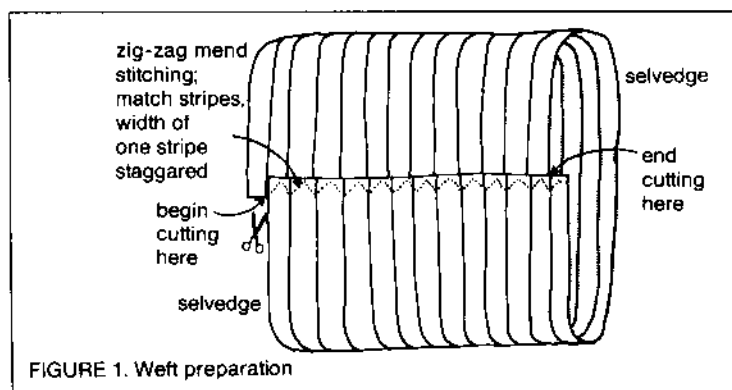
fold. Treat each twofold end as one, both in the heddles and through the reed.

**Selvedge sleying:** If a ten dent reed is used, sley the selvedge ends closer together for two or three dents. If a 5 dent reed is used, reinforce the selvedge ends by using the yarn threefold instead of twofold.

**Total number of ends:** 360 or 180 working ends.

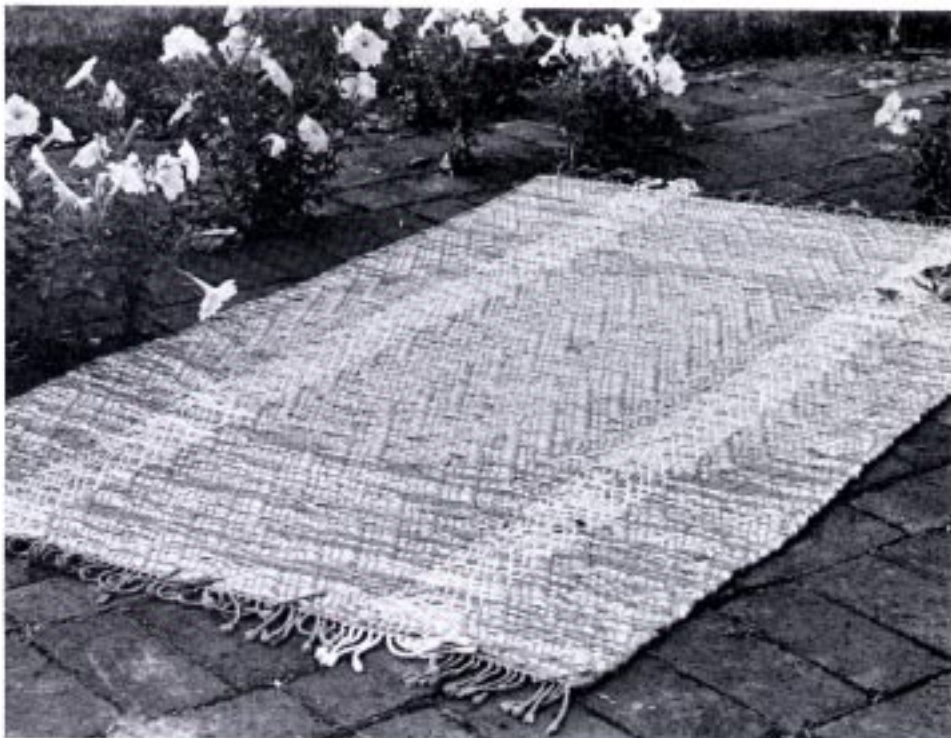
**Length of the warp:** Allow for the length of the rug, loom waste and fringe and add at least 18" (46 cm) for take-up. There is a lot of take-up when using a rag weft.

**Threading, tie-up and treadling:** See Fig. 2.

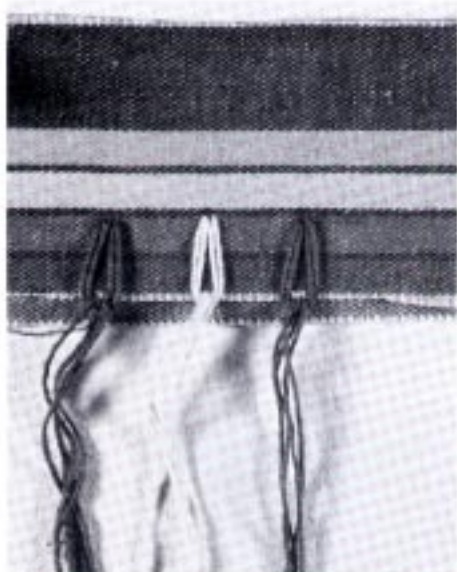


I treadled the double rosepath in a  $\frac{2}{2} \frac{1}{1} \frac{1}{1}$  twill to create a zigzag pattern which, with the wide sett and heavy weft, gives a quilted appearance to the finished rug (see Photo 3). A four shaft twill or plain weave also would yield a most satisfactory rug.

**Weaving:** The secret of the circle in the rug is in the manner of laying the striped rag weft. I rolled the rag strips so that the outer, orange stripe was always concealed when weaving background. To form the orange circle, I rolled the orange stripe to the outside, carefully manipulating a different portion of exposed orange for each weft of the circle. For example, the first circle weft laid in exposed just a small amount of orange at the center of the web; the next pick exposed slightly more orange and so on throughout the weaving.



3. An eight shaft twill gives the rug a quilted look.



2. Double warp ends and denim weft

Using a garbage can lid as the pattern, I cut a circle from newspaper to use as the guide in forming the orange circle. Any desired shape or shapes can be formed in this manner as long as an appropriately striped fabric is used for the strips of rag weft. Note that the reverse side of the "sun rug" shows no orange!

You may begin the rug with a half-inch or so heading in carpet warp and plain weave if desired; however, this section will be shrinkage-prone and should be pulled laterally while still damp during laundering. I knotted, twisted, then knotted again groups of four (sin-

gle) warp ends for a durable fringe. Or use your own favorite weft-protecting finish. The completed rug is sturdy, useful and attractive. Your weaving friends will wonder how you did it!

*ABOUT THE AUTHOR:* Jery Oles is an Ohio weaver. After years of enjoying sewing, knitting, crocheting and embroidery, she discovered weaving about five years ago. Though she has a Bachelor of Fine Arts degree from Ohio State University, she has never studied weaving formally. Her weaving skills have come from books, magazines, brief workshops and from weaving friends. In 1981, with her two children raised and educated, she left her government writing career to pursue weaving. She is currently editor of "Thrams", the Central Ohio Weavers Guild newsletter and is exploring rug weaving techniques.

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## FLAMEPOINT RUGS FOR EVERYBODY

by Betty Burian Kirk

Have you ever wondered what to do with all that synthetic knitting yarn you've collected? Over the years I've collected quite a bit. I couldn't resist a sale! What does one do with a synthetic yarn? It's not as nice as wool and certainly isn't as cool as cotton. The strong points of synthetic yarns are: their deep, pure colors; easy availability; they are washable and they are durable.

The key word above is color. I decided to experiment with color. Sifting through my resource books for direction, I found a draft for flamepoint on a honeysuckle threading in Mary Black's *The New Key to Weaving*. I've always been attracted to this pattern and it is perfect for experimenting with color.

While weaving the rugs, I received many compliments on the nice

selection of color. Two friends even commissioned rugs, selected their own colors and were delighted with the results. You can't go wrong with your colors if you stick to a monochromatic color scheme (lights and darks of one color) or an analogous color scheme (colors that are found next to each other on a color wheel).

**Warp:** 8/4 cotton carpet warp, color—natural, (I used about three and a half pounds for a seven and a half yard long warp.)

**Weft:** 4 ply synthetic knitting yarn. You need four colors; 6 to 8 oz of each, for a total of 24 to 32 oz.

**Sett:** 12 epi, sleyed single in a 12 dent reed (50/10).

**Width in reed:** 28" (71 cm). I used 335 ends.

**Threading:** See Fig. 1.

**Tie-up:**  $\frac{2}{2}$  twill (1-2, 2-3, 3-4, 1-4) and tabby (1-3, 2-4).

### Treadling:

Treadle	Color	
1-2	lightest	} 3X
2-3	pale	
3-4	medium	
4-1	dark	
1-2	pale	} 3X
2-3	medium	
3-4	dark	
4-1	lightest	
1-2	medium	} 3X
2-3	dark	
3-4	lightest	
4-1	pale	
1-2	dark	} 3X
2-3	lightest	
3-4	pale	
4-1	medium	

These four units are repeated for the entire length of the rug. Keep

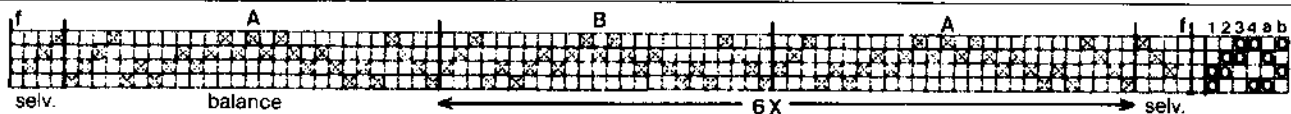


FIGURE 1

f = floating selvedge

the yarn colors in the same order for each one of the units (3 repeats) and then go to the next unit by simply placing the first color as the last.

**Warp length:** 7½ yards (7 m) for five rugs of varying lengths.

**Finishing:** Two choices are possible. Originally I tied a Philippine edge as found in Peter Collingwood's *Rug Techniques* and then threaded the warp back up into the rug. I found this a satisfactory edge but time consuming. I now weave a 2" tabby area with the synthetic yarn at each end of the rug. Machine zig-zag the raw edge with a matching thread and then fold it over making a 1" hem. Hand sew the hem with a large needle and the same color synthetic yarn as used in the tabby.

**Shrinkage:** About 5% from loom width after cleaning.

**Cleaning:** I have been machine washing rugs that have been tied with a Philippine edge with no problems. After four years use my front hall rug shows very little wear.

**Weaving:** Using a knitting yarn as weft is generally frowned upon because it tends to draw in ones edges. However a bound weave is packed so thick and tight that this does not seem to occur. To cover the warp threads, follow these two steps: Step one: Always bubble or arc your weft yarn at least 8". This allows enough weft to go over and under the warp and pack tightly. Step two: Beat your weft into place tightly! I recommend you switch sheds and beat heavily or two

medium beats if your loom is not constructed for heavy pounding.

**Yarn source:** Carpet warp is found in most yarn stores or can be ordered from Lee Wards or Lily Yarn Company. 4 ply synthetic knitting yarns are found everywhere! Sears, J.C. Penney's, Venture, K-Mart, etc.

*ABOUT THE AUTHOR: Betty Burian Kirk started studying fiber at Northern Illinois University, where she received a B.S. Ed. degree in Art Education. She later returned to N.I.U. to receive an MA and presented a one person show using non-loom techniques. The last few years, she has spent her time weaving gifts and household items. She has purchased a new multi-harness loom and plans to weave some pattern weave art pieces.*

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in successive picks overlap progressively, so that an area of light/dark horizontal stripes results, with solid color on each side.

**Meet-and-separate** using two colors L and D is done as follows: Open a tabby shed and insert colors L and D from opposite sides of the rug. The colors meet at the *left* edge of the hatched design. Change the shed and return each toward the selvedge edges. The colors separate at the left edge of the hatched design. Change the shed and insert colors L and D, again from opposite sides of the rug. The colors meet at the *right* edge of the hatched design. Change the shed and return each color toward the selvedge edges (see Fig. 1).

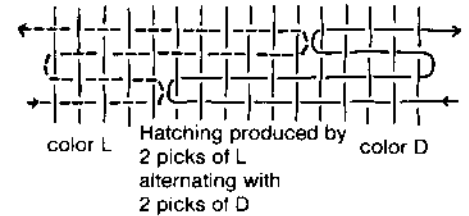


FIGURE 1

At the stage when each diamond had been half woven, the colors were switched. This maintained the striping in the diamond while making an interesting dog-leg shape in the background (see Fig. 2). Two new but compatible colors were used for each successive diamond. As weaving progressed some interesting optical effects appeared, according to whether the eye was seeing dark shapes on light, or vice versa. When the rug was completed, particularly when seen hanging vertically, it could take on a three-dimensional appearance suggesting a stack of logs. (Do you see those logs heaped up on the left—or on the right—?)

**Weave and loom:** The rug was woven in west-faced plain weave, on a countermarche floor loom, made by D. S. Thorpe, New Zealand.

**Warp:** 8/3 unbleached linen rug warp.

## MEET-AND-SEPARATE TECHNIQUE

by Mary Martin

The floor rug shown here measures 8' by 3', and lies in a passageway linking an entrance hall and a living area.

My basic design idea was a sequence of diamond shapes on a striped background, the shapes placed to form a meandering path, like stepping stones in a garden, leading one's feet on, but allowing some dallying along the way. Little

did I realize then the intriguing optical illusions these shapes were going to create.

The diamonds were formed by a hatching of two colors in the tapestry technique known as meet-and-separate. Where a light color (L) is woven only on the left side and a dark color (D) only on the right, the contrasting yarns can meet, return to their origins in the next pick, and

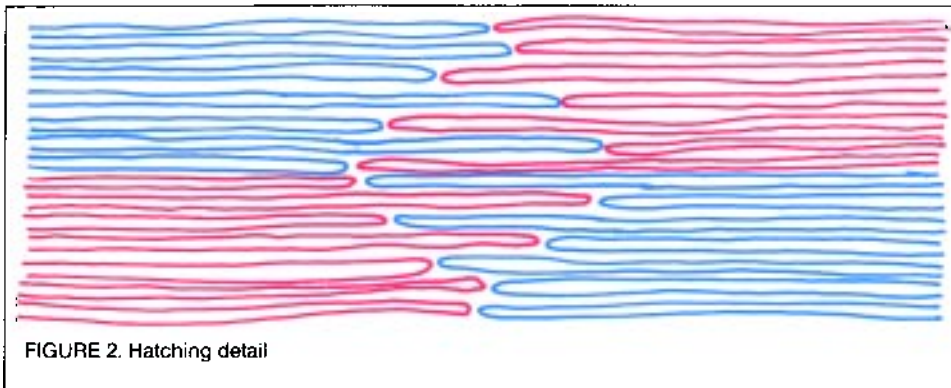


FIGURE 2. Hatching detail

**Sett:** 4 working ends per inch. (15/10) Every second end was used twofold.

**Width in the reed:** 36" (91 cm).

**Weft:** The weft yarns were miscellaneous two and three-ply rug wools. Various strands of the same color were wound together so that the resulting weft yarn had a total of 8 plies.

*ABOUT THE AUTHOR. Mary Martin is an Australian weaver. Her weaving career began in 1978 during a year's residence in England when she attended a weaving school at Highbury Manor in London. She wrote "In a large attic room cluttered with looms of all shapes and sizes, warping frames, creels and spinning wheels, there were no two projects alike, as everyone experimented with samples, hangings, rugs, yardage and loom-shaped garments. Given just enough information about a weave, the student was challenged to explore its possibilities in color, yarn, weave*

*and design by playing around at the loom rather than by referring to books for ideas."* After returning home to Sydney, Mary continued her new hobby. She took an evening class at Strathfield School of Textiles and followed that with a two-year course in craft textiles. Eventually she began to create a textile from the raw fiber stage. "When all goes right, nothing can be more satisfying," she said, but warned that it takes a lot of time. Her next project will be a rug in handspun vegetable-dyed Drysdale wool. ■

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# BLUE-BLEAK EMBERS

by Mary  
Rawcliffe Colton

*"... blue-bleak embers . . . / Fall,  
gall themselves, and gash gold-  
vermilion."*

from "The Windhover"  
by Gerard Manley Hopkins.

That spectacularly visual line became the inspiration and the lengthy title for a wall rug, the ninth rug I have designed and executed in clasped weft technique (see Photo 1). Being neither a weaver of time-consuming tapestries nor a scrupulous follower of cartoons, I have turned to the clasped weft technique for a sturdy rug structure, quite quickly woven, with design limitations which need to be taken into account during the creative process.

A development of the old rag rug *ball in a basket* technique, clasped weft is usually a two-yarn (or rag strip) process that permits designs more complex than simple stripes. The procedure is this: open a shed; throw a shuttle of yarn from right to left; pull the shuttle out of the left selvedge, catching it around a second yarn that is coming from a ball or cone on the floor by the left side of the loom, and send the shuttle back through the same shed, to the right selvedge (carrying the second yarn back with the shuttle yarn) (see Fig. 1); pull the loose ends of both yarns to place their joining point where you wish it; arc both yarns, change shed and beat. Once both yarns are anchored, the procedure is much faster than the description of it; one shuttle pulls two yarns into place, and the

weaver has the pleasure of making color change decisions with each row of weaving.

Peter Collingwood (*The Techniques of Rug Weaving*, pp. 130-133) describes the technique as a var-

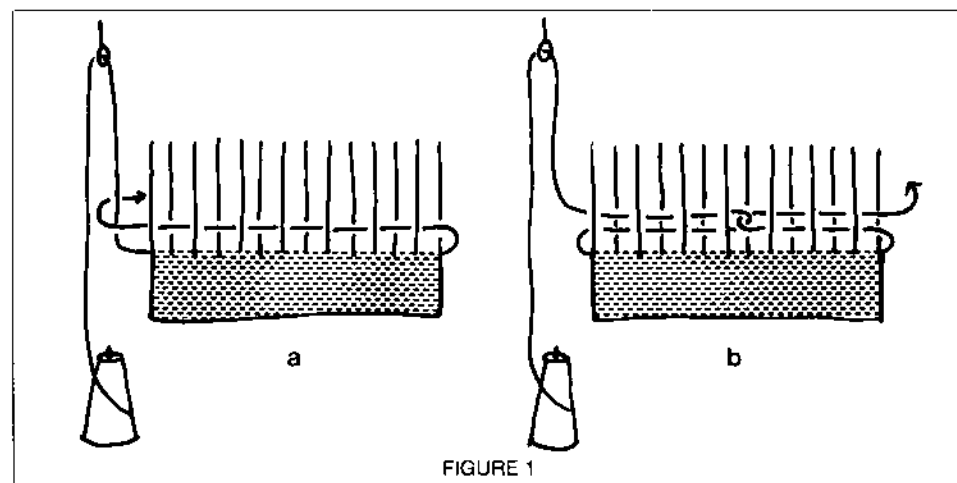


FIGURE 1



1. "Blue-bleak embers"

Mary Colton



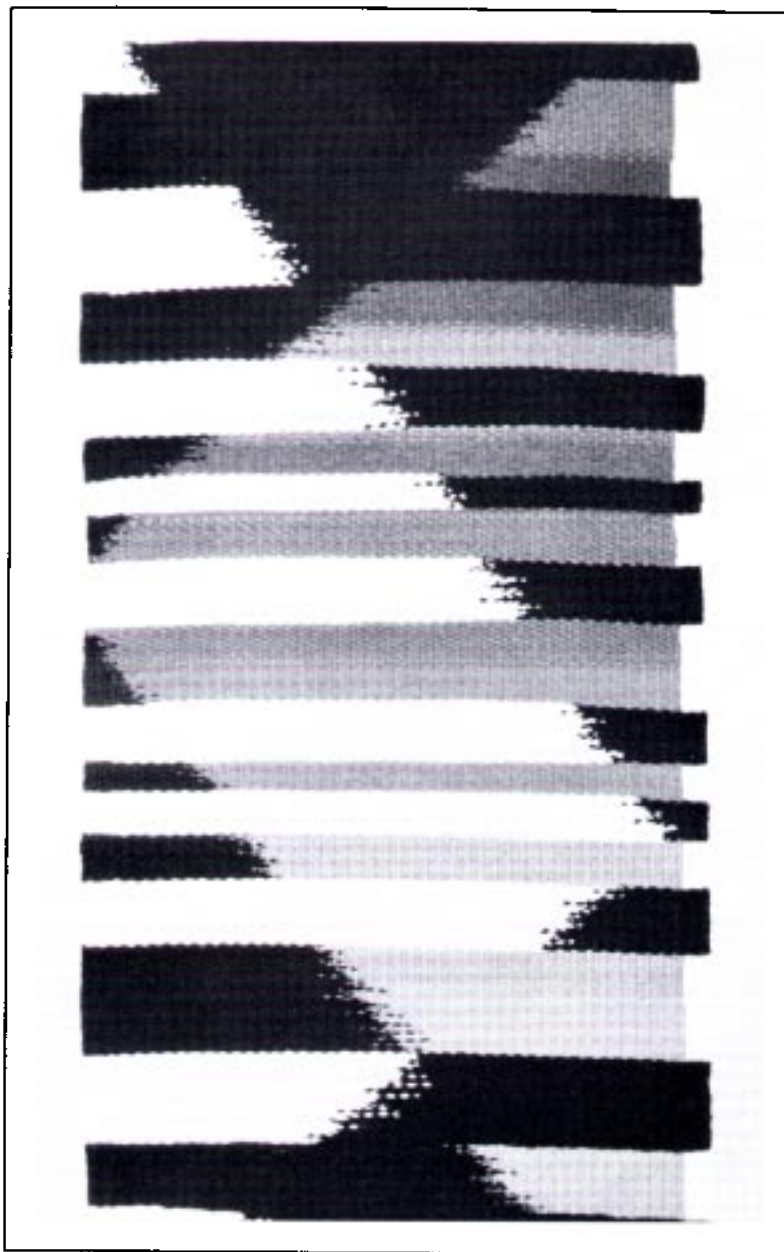
iant of *meet-and-separate*. I find clasped weft to be superior to meet-and-separate for several reasons. Crucially, for rugs at least, clasped weft is stronger because the wefts interlock in each shed. For a year my family walked on two scatter rugs, one of each structure, each the same size and woven from the same heavy linen warp with similar rug wefts. The clasped-weft rug remained squared and flat while the meet-and-separate rug rippled on each side of the join lines and lost its crisp, rectangular shape. In addition, as Collingwood points out, since the clasped-weft yarns travel both directions in the same shed, not only are horizontal stripes possible (by throwing 2 picks of one color and 2 picks of another color as in meet-and-separate) but also vertical stripes, (by throwing 1 pick of one color and 1 pick of another color) and spots in a field (by throwing 2 picks of one color and 1 pick of another color). Third, the point of the interlock creates a small bump which can be either hidden under a warp for a smooth surface or allowed to lie on top for texture. Finally, I think two-yarn clasped weft is faster to execute.

With clasped-weft design, possibilities are limited. Using the two-yarn method, one can have only three color areas across the rug width: the solid color on each side and a half-tone area between them either with pick and pick, 2 and 2, 2 and 1, or a hatched effect. There-

fore a many-colored pictorial tapestry is impossible. I find this a challenge that can be turned to advantage; designs are simplified and

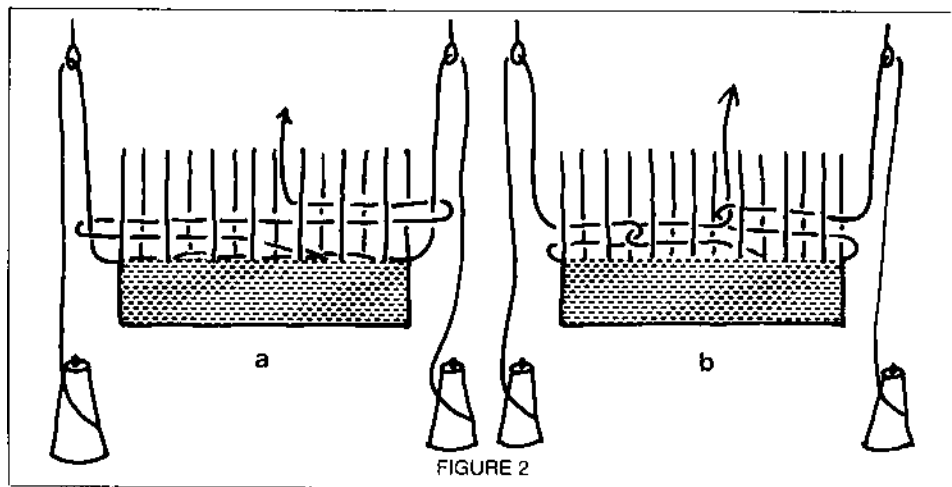
made bolder and more graphic. In addition, by superimposing two designs, one can use the effect of transparency to create a third image. In my earlier *Rhythms III* (see Photo 2) this effect is enhanced with indented edges, but the indentations are not essential. If I were painting a yarn picture, as in tapestry, I would not be forced to such devices, and my designs would tend to be representational and less original.

Five color areas, with a central color and background colors with half tones on either side, are possible with the more difficult three-yarn clasped weft technique in



Mary Colton

2. "Rhythms III"



which I wove *Blue-bleak Embers*. I use Collingwood's first method: with my central yarn on a shuttle, I enter the shed at the right point of my central color, throw the shuttle to the left selvedge catching the left yarn, throw the shuttle to the right selvedge catching the right yarn, and then take the shuttle back and out of the shed at the point it entered. Each yarn must then be placed and arced before beating.

Because the use of a third yarn nearly doubles the time needed, I usually alternate three-yarn areas with one- or two-yarn areas to compensate as I did in *Blue-bleak Embers*. The three-yarn method has one other problem: the shuttle weft passes over or under two warps at the point it enters the shed, leaving a longer weft loop (and corresponding uncovered spot) on either the top or the back of the rug. In most cases this is hardly noticeable, but needs to be thought of both for design and wear.

To finish *Blue-bleak Embers*, I used

the Philippine knot along both ends of the warp, then hand stitched the ends down to the back of the rug. The ends could have been pulled back into the warp channels, but that process makes the rug ends look wider and thicker than the rest of the rug. Using a crochet hook, I did pull all the weft ends into warp channels for an inch or so, then trimmed the remaining ends at the rug surface; the weft, therefore, looks finished on both front and back. For hanging, I stitched the smooth half of a Velcro strip to the rug, then glued and stapled the rough half to a strip of lattice cut barely shorter than the width of the rug; two holes drilled through the Velcro and lattice permit the rug to be hung with no visible device.

**Warp:** linen rug warp

**Sett:** 3 working ends per inch (10/10). Each end is used twofold.

**Weft:** Rya yarn. Note that the wefts are always doubled in each

shed. Therefore the warp spacing must be wide.

Any wool rug wefts would be effective, and on some rugs I have mixed sizes and plies for texture; however, one avoids problems of a puckered surface and uneven edges by using all the same weight weft yarn.

Most of my rugs are designed to be viewed vertically as wall hangings. However, the technique works equally well for the floor, producing bold or subtle statements and very durable results.

*ABOUT THE AUTHOR: Mary Rawcliffe Colton holds an MAT degree from Harvard Graduate School of Education. She has taught weaving from Craft Alliance and Fontbonne College in St. Louis, MO and is at present an academic instructor of weaving at the University of Albuquerque. She gave a workshop and a slide-lecture at the 1981 Midwest Weavers Conference, "Designs from Nature." Last year she gave a slide-lecture for Las Arañas Guild, Albuquerque, N.M., of which she is a member, on "New Mexico Inspiration and Fiber Work."*

*Mary Rawcliffe Colton received the Lauer Award at the 1983 Liturgical Arts Exhibit at Bowling Green State University in Ohio. ■*

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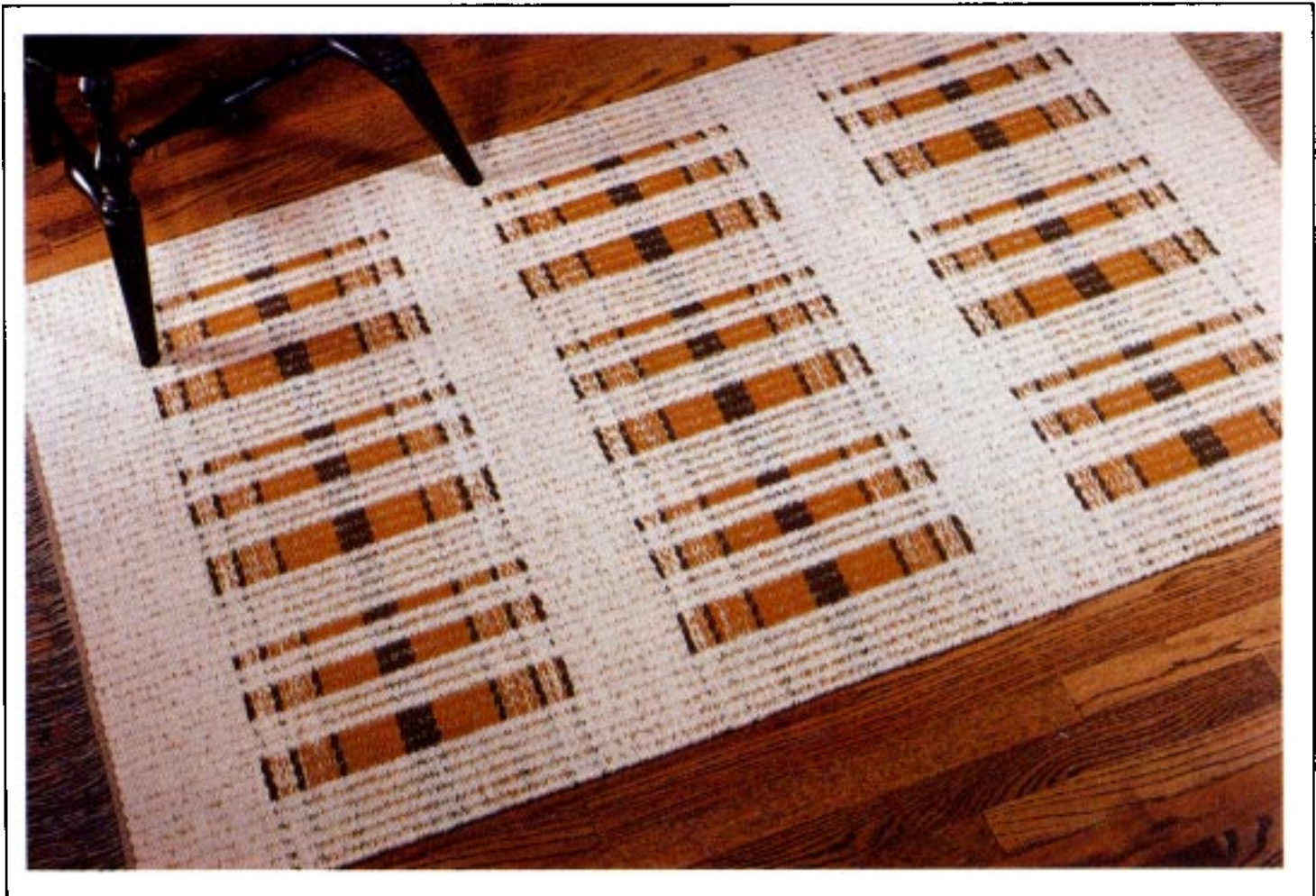
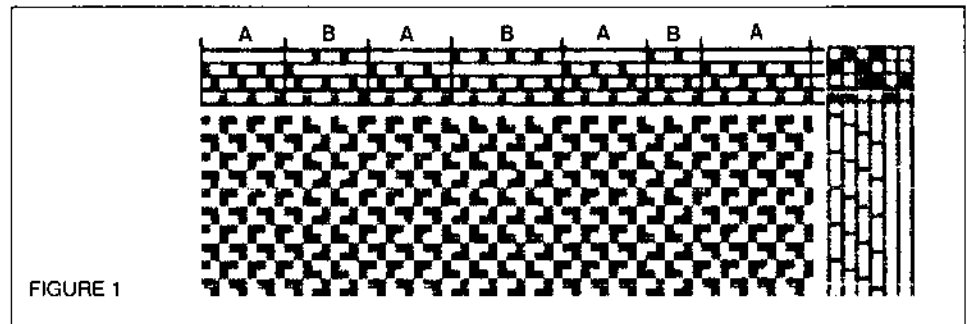
# RUGS ON A THREE-END BLOCK DRAFT

by **Connie Kindahl**

The terminology "three-end block draft", "four-end block draft", "six-end block draft", is frequently used by Peter Collingwood in the chapters dealing with two-tie unit drafts. The two-tie refers to the number of shafts which carry the warp ends (regularly distributed across the warp) that determine the length of the weft floats of the basic weave structure. The remaining shafts of the draft control the patterning. These drafts have blocks, each constructed from the repetition of identical threading units. All threading units have the same tie-down shafts. All threading units of the same block have the same pattern shafts, though the pattern shafts vary from one block

to another. The three-end, four-end, six-end, refers to the size of the block unit. A two-tie, three-end unit block draft for a four shaft loom uses shafts 1 and 2 as tie-down shafts, shaft 3 as the pattern shaft for block A and shaft 4 as the pattern shaft for block B. A typical threading is shown in Fig. 1.

The three-end block draft threading for rug weaving provides great scope for design possibilities; a rug produced with this threading is handsome, firm and reversible. This is the weave that Peter Collingwood uses as the basis for shaft switching in his book *The Techniques of Rug Weaving*.



**Warp:** 10/6, 10/5 or 8/6 linen rug warp

**Weft:** 6 pounds New Zealand spun rug yarn, color white; 2½ pounds rug yarn color gold; 1 pound rug yarn, color brown. All rug yarns are from Ironstone Warehouse.

**Sett:** 4 epi (every third dent in a 50/10 cm reed)

**Width in reed:** at 4 epi — 41½ inches (105 cm); with a 50/10 cm reed—39 inches (1 m).

**Total number of warp ends:** 165 working warp ends. Double every other end, being sure to double the selvedge ends. This means winding a total of 238 ends.

**Length of warp:** 3 yards (2.7 m). This allows for a 68 inch (172 cm) long rug, 10 inches (25.4 cm) for fringe at the beginning, and 30 inches (76 cm) loom waste, from which will be taken 10 inches (25.4 cm) for fringe at the end of the rug.

**Threading, tie-up and treading:** See Fig. 2.

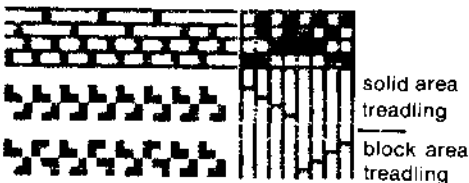


FIGURE 2

**Measurements:** Pulling in during weaving should amount to no more than ½ to ¾ inch. Final rug size should be about 40½ x 68 inches with a sett of 4 epi (97 x 172 cm with a 50/10 cm reed.) The fringe is additional.

**Beaming:** Even tension is very important for weaving a firm, flat rug with square corners. Warping from front to back allows for a smooth beaming and helps in getting an even warp tension. After

sleying the reed and threading the heddles, tie on to the back rod in narrow groups of warp ends. Tighten each warp end separately. Beam very carefully, striving for perfect tension. Linen rug warp has almost no give to it and loose warp threads will cause problems. Use sticks between layers of warp on the back beam or use very heavy paper.

**Tying on in front:** Allow 10 inches for fringe, which provides plenty of warp for tying. Tie on in narrow bunches of warp—6 warp ends per bunch is good. Smooth each bunch carefully so that each end will have the same tension. Tie on all the way across with only half of a square knot. Tighten each half knot, starting at the center and working out to each side. Do this several times until you are satisfied that tension is even, then complete the knots. Tighten each individual warp end separately.

**Filling in:** The filler does more than spread the warp; it creates a good foundation against which to weave. Fill with a very loose weft and bubble or “peak” the filler so that the warp won’t pull in at the edges. Continue weaving with filler for about 2 inches.

**Twining:** Use a piece of warp thread about 3½ to 4 times the width of the rug, and twine all the way across the warp. Be sure to separate the doubled warp threads. This twining will become part of the rug and will help to protect the weft. Leave the two ends of the twining thread hanging loose and incorporate them into the fringe later (see Fig. 3).

**Preparing the weft:** Wash the yarn. A surprising amount of dirt and excess dye will come out. The

yarns will also “loft” and make a more attractive rug. Skein the yarn, then tie tightly in 3 places to keep it from tangling. Machine wash in cold water. Let the machine agitate for only ½ minute or so, then stop the machine and let the yarn soak for about a half hour. Then rinse thoroughly, spin dry, and hang from coat hangers to air dry.

**Weaving:** Keep the warp under very tight tension—as tight as possible. Start one shuttle from the left and the other from the right. Always keep the shuttles in the same position. Don’t rotate them. If the white shuttle is closest to you, always put it back in that position after using it.

Throw the first shuttle, and leave about 10 inches of weft hanging out. After beating, reopen the shed, pull out one of the three strands several inches before the end, make sure the others catch around the selvedge warp end and put them back into the same shed. Bring each of them out in different places in order to distribute the bulk. Do the same with the second shuttle.

For the width of this rug use an extra 6 or 7 inches of weft in each pick. Do this by making a “peak” in the open shed. Hold it in place while you close the shed. This will “clamp” the yarn in place. (see Fig. 4). Beat very hard, several times. This extra weft is necessary in order to cover the warp. The warp threads will remain straight, and the weft threads must travel over and under warp threads, thus taking far more length than the 40 inches or so of the rug width.

Always give the weft thread a gentle tug when making the peak in order to get a firm selvedge. Be con-

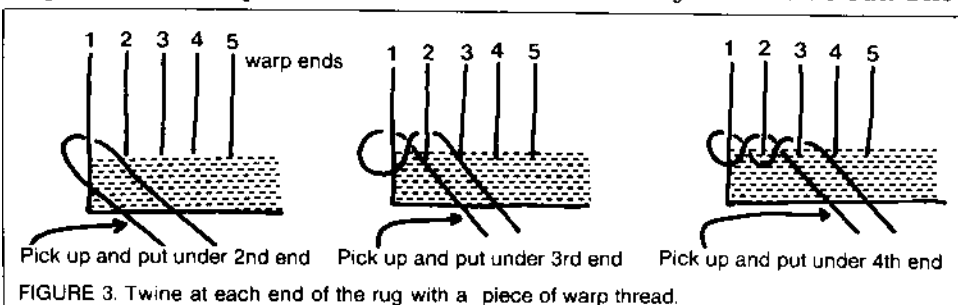


FIGURE 3. Twine at each end of the rug with a piece of warp thread.

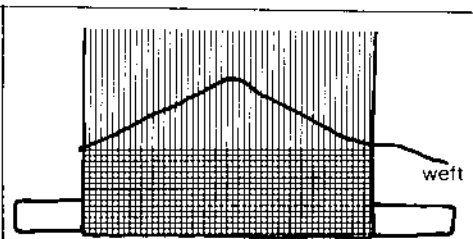


FIGURE 4. Make a peak with the weft in the open shed.

sistent with the amount of tug you use each time.

**Darning in weft ends:** It's far easier to darn in the weft ends as you go along than to wait until you've finished the weaving. When changing shuttles or when starting a newly wound shuttle, overlap yarns and distribute the bulk in the open shed, then darn in each thread separately, darning *down* along a warp end. The only time this can't be done is when starting the rug. Those first weft ends should be darned in going *up* along a warp end as soon as you've woven enough area to darn up into. Don't cut these ends off until you've woven at least 2 more inches. (Beating has a cumulative effect.) Then pull them tight and snip them off at the surface.

**Measuring:** When measuring the amount of weaving, compress the last picks of weft by pushing the fell of the rug down with your fingers. (The weft will continue to be compacted by more weaving and beating through the next two inches, so that your finger pressure is necessary to simulate this.)

#### Weaving order:

- A. Weave with solid area treading, using 2 shuttles, one wound with 3 strands of white, the other with 2 strands of white and one of gold. Weave for 5½ inches.
- B. Change to treading for block area, using the white shuttle and changing the other shuttle to one wound with 3

strands of brown. Weave 8 picks, showing 4 picks of brown in the blocks.

- C. Continue treading for block area, using the white shuttle but changing the brown shuttle to the shuttle used in A, wound with 2 strands of white and one of gold. Weave for one inch.
- D. Repeat B.
- E. Change the brown shuttle for a shuttle wound with one strand of white and 2 strands of gold. Weave 1½ inches, using the block area treading.
- F. Repeat B.
- G. Change the brown shuttle to a shuttle wound with 3 strands of gold. Weave 2¼ inches using the block area treading.
- H. Change the gold shuttle to the brown shuttle and weave one inch with the block treading.
- Repeat G, then F, then E, then D, then C, then B using the block area treading.

Go back to A, using the solid area treading. Weave 5½ inches.

Start again with B and weave the second block.

Weave another solid area, 5½ inches.

Start again with B and weave the third block.

End with solid area, 5½ inches.

Note: One shuttle, the white one, remains white during the entire weaving process. The other shuttle is the one that frequently changes.

**Ending the rug:** After darning in the last weft ends, twine again across the warp. Weave in about 2 inches of filler, which will help to hold the last rows of weft firmly in its properly beaten down position. Allowing 10 inches for fringe, cut the rug off the loom. Unroll it from the cloth beam and untie from the front rod. Don't try to slide it off.

**Fringe:** Fringe with a Damascus edge as a weft protector, then braid each group of 6 warp ends or ply groups of 4 warp ends. In either case, finish each with an overhand knot. A spot of glue within the knot, as you tighten it, will help to hold it firmly.

**Pressing:** Press the rug by laying it flat on a carpet or on smoothed towels. Cover with a damp sheet and steam press. Leave the rug in place for a day or two until it's thoroughly dry.

The rug should be one of which you'll be proud.

*ABOUT THE AUTHOR: Connie Kindahl is a New England weaver who specializes in weaving rugs. She has studied at the University of Illinois, the School of Weaving in Oslo, Norway and the Hill Institute in Florence, MA. In 1981 she was awarded a Master Weaver's Certificate.*

*Connie gave a Rug Workshop for the Weaver's Guild of the Southern Berkshires in 1982. She teaches classes at WEBS in Amherst, MA. She has shown her rugs in such exhibits as the Bank Street College Fiber Show, Western New England College Exhibit and at Convergence '82 in Seattle, WA. Among her most recent awards are First and Second Prize for two rugs in the Craft Adventure Show of the Eastern States Exposition in 1982 and, in 1983, First Prize and Best Rug awards at the New England Weavers Seminar.* ■



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# FOUR-END BLOCK DRAFT

## or SUMMER AND WINTER

by Barbara McClanathan

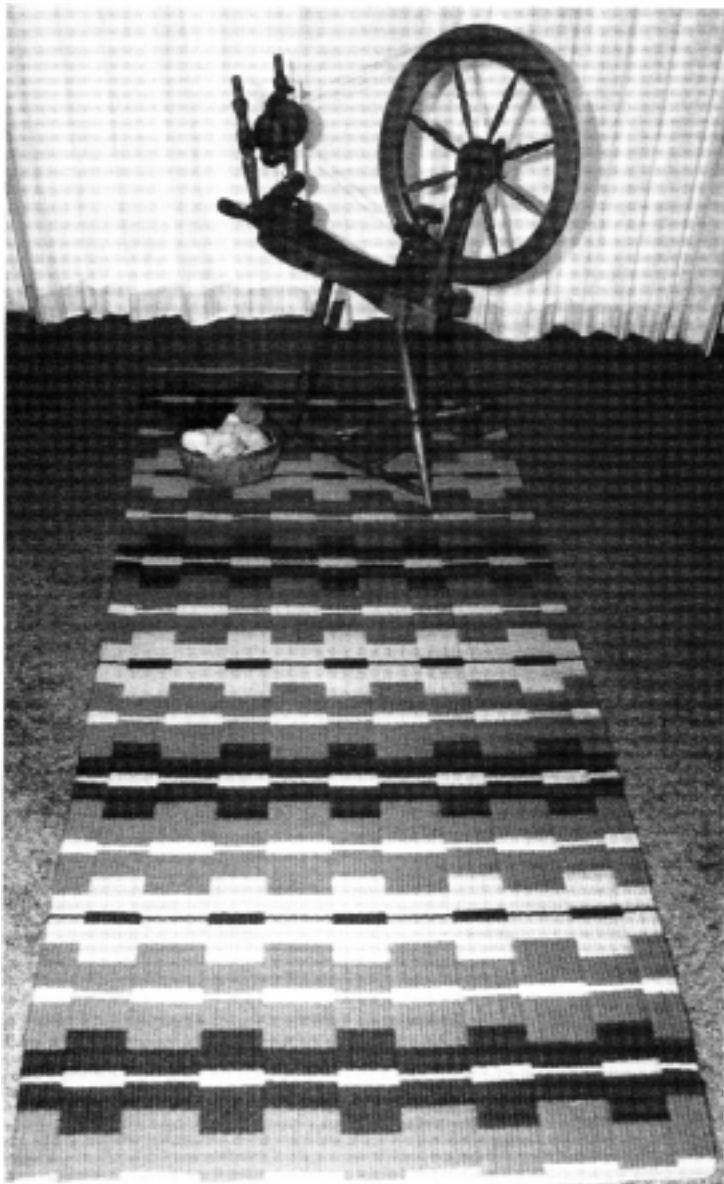
At the end of my first term of weaving classes, I happened to come across a very inexpensive source for mill-end rug wools. This gave me the idea of testing my budding skills by making a rug for our living room.

When I thought about ordering the yarn I knew that I was limited in my choice to the yarn colors and amounts the company had available at the time. So I made some watercolor chips in a range of

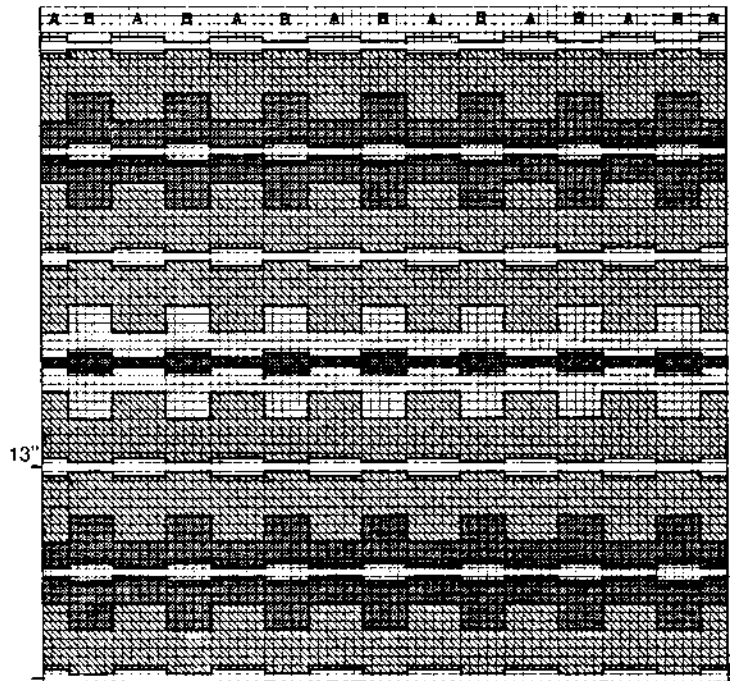
colors which would complement our living room and sent them to the company with instructions to select three or four colors matching the chips. In return they sent me four yarn samples with the color numbers and amounts they had available of each. It was not the best possible combination. I would have preferred to use dark brown for a background color, but there was not enough of it available. There also was not enough time to start the whole process with the

color chips over again, because the second term of classes was about to begin and the loom I had reserved for the project would be assigned to someone else if I was not ready. So I ordered the yarn from what was available and also bought a 20/4 linen for the warp which the owner of a local weaving supply store assured me would be suitable for my project.

During all this time I had become increasingly aware of my limited knowledge and tried to gain some fundamental insights of design possibilities by spending many hours studying Peter Collingwood's *Techniques of Rug Weaving*, and a book by Clotilde Barrett called *Boundweave*. When the yarn arrived, I found myself sitting in



John Neal



start

- = lime green
- ▨ = rust
- ▩ = brown
- ▧ = orange

FIGURE 1. Pattern; repeat 7 times, 3 repeats shown.

front of 20 lbs. of wool (9 lbs. (4 kg) of rust, 5 lbs. (2.3 kg) of brown, 3½ lbs. (1.5 kg) of orange, 2 lbs (0.9 kg) of light olive) and 3 lbs. (1.4 kg) of linen with no assurance the two would be compatible and a confused mix of design ideas in my head. The dimensions of the two finished rug panels were to be 36" (.9 m) wide and 92" (2.34 m) long. After playing for some time with some graph paper and watercolors, the 4-end block draft emerged as a solution to two major problems:

1. As I did not know how much weft the finished rug would require and as I was limited to the amount on hand, I needed to make the fullest use of each available color.
2. I wanted to have large areas of color to avoid an overly busy design.

The 4-end block draft, which is the same as the Summer and Winter draft, is a two-tie unit weave. With a 4-shaft loom, shafts 1 and 2 are the tie-down shafts. They insure that the weft never floats over more than three warp threads. Shafts 3 and 4 are the pattern shafts. Each block is a repetition of a 4-end threading unit. The unit of the A block is  $\begin{matrix} 1 & 2 & 3 & 1 \\ 1 & 2 & 3 & 1 \end{matrix}$ , the unit of the B block is  $\begin{matrix} 4 & 2 & 4 & 1 \\ 4 & 2 & 4 & 1 \end{matrix}$ .

The next major hurdle was to determine which epi would give a sufficient coverage of the warp threads. After making several small samples, I found that the 20/4 linen was really too thin for the purpose of this project. Finally I decided that a sett of 6 epi with the linen thread used double would make a good rug fabric.

With a fabric width of 36" (.9 m) and 6 epi, I had 54 units of 4 ends available to combine into the blocks of the final design. I added one group for a center and one additional end for the left selvedge because a good selvedge can be woven if the outside ends on both sides are threaded on shaft 1. No floating selvedge is necessary.

I wanted the blocks to be of about equal width except for the two outside ones which should be half as wide as the others, so that when the

two finished panels were laid next to each other there would be one continuous pattern.

**Warp:** 20/4 linen used twofold, 3 lbs (1.4 kg).

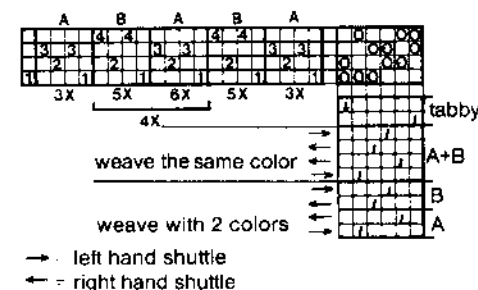
**Weft:** rug wool millends; 9 lbs. (4 g) rust, 5 lbs. (2.3 kg) brown, 3.5 lbs (1.5 kg) orange, 2 lbs. (.9 kg) olive.

**Sett:** 6 working ends per inch.

**Width in the reed:** 36.8" (93.5 cm).

**Total number of working ends:** 221.

**Threading, treadling and tie-up:**



**Selvages:** The first and the last working ends are threaded on shaft 1. The last two working ends on each side are used threefold instead of twofold.

When I started the actual weaving, it took some time to figure out the best way of laying in the weft and changing the shed. No matter which way I positioned the yarn or how much or little slack I gave it, I either got loops or pulled in selvages, until someone in my class suggested I pull the weft up from the center of the weaving toward the beater for about 6 to 7 inches in an inverted V shape and change the shed before beating in the weft. This worked beautifully and resulted in an even fabric with good and firm selvages without drawing in. I found that weaving with two shuttles, one at the left and one at the right, was the most practical at all times, even when there was only one color. It helped in getting a "feel" for the pattern and establishing a treadling rhythm as well as in keeping the selvages neat and even. Each row of this pattern consisted of four picks: the left-hand

shuttle went to the right and back; the right-hand shuttle went to left and back. Because my watercolor sketch was done to scale and I knew how many inches of each color block I wanted, I simply used a tape measure to find out how many rows per inch I needed. It turned out to be 10 rows or 40 ppi. To change color I cut one weft thread at the selvedge about 2" longer than the edge and wove it back in on the tabby treadling. Then after two picks with the other shuttle I would start a new color by weaving its end back in for two inches. The packed down weft eventually covered these spots completely. With a heavier weft yarn this method may not work as well.

**Finishing:** I started and ended the rug by weaving 6 picks of plain weave with a heavy pearl cotton in light olive green. After the first panel was finished, I cut it off the loom. I did not want a fringe, so I secured the warp ends with a Maori braided edge (see: P. Collingwood *The Techniques of Rugweaving*, pp. 489-90 or Rachel Brown *The Weaving, Spinning & Dyeing Book*, p. 198) and then pulled all the ends back into the fabric of the rug.

**ABOUT THE AUTHOR:** Barbara McClanathan was born and raised in Germany. She has done a lot of needlework like knitting, sewing and embroidery as well as such crafts as pottery, jewelry and some wood-working. In 1982 she took some weaving classes from Katy Turner in Portland, Oregon and wove the rug she has shared with us. She is now an avid weaver and spends as much time as possible at her 8 harness loom. ■

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# VARIATIONS ON A LANDES THEME

by Lucele Coutts



Bill Coutts

1. The lounge cushion woven with Berber wools is edged with a special twined edge which formed the cushion shape.

It was Mary Meigs Atwater who introduced us to John Landes, an early American professional weaver.

She had found his pattern books in the Frishmuth Collection in the Pennsylvania Museum in Philadelphia. With the museum's permission, she published some of them in 1925 through her Shuttle Craft Guild. Long out of print, the Southern California Handweaver's Guild, curators of her Memorial Collection, reprinted this book in 1977.

Although nothing is known for sure about John Landes, he was probably an itinerant weaver who lived during the Revolutionary War

period. His transportation would have been a heavy ox cart piled high with his loom and other tools. Among his belongings were his precious pattern books which included some of the popular weaving patterns of the day as well as many original designs he had developed as the need arose. His customers pored over his books to choose exactly what they wanted. If they couldn't find the perfect design, he would spend his spare time drawing new ones. This was probably done by candle or fire light late at night, for his daylight hours must have been spent in warping and weaving. When a design was chosen, he wove the fabric, using the home spun and dyed threads given him by the cus-

tomers. He probably set up his loom in one of the out-buildings of the farm, and his bed was most likely the hayloft. Today, although the itinerant weaver is gone, a few blacksmiths still cover some of the area of the east and midwest using buildings on different farms to set up equipment in order to ply their trade in the community.

There are 78 drawings in Landes' book. Two of the patterns had been chosen for the theme of a guild project. As a theme for a workshop, I got interested in adapting these weaving patterns to other fiber techniques such as basketry. I knew that the patterns had to be changed to be adapted to coiled baskets, and since much time would be spent in making the necessary changes and variations, only a little more time would be needed to develop ideas for other fiber techniques. Because our guild members are involved in all fiber areas, the participation in the project would appeal to more people if they could adapt the patterns to their areas of interest.

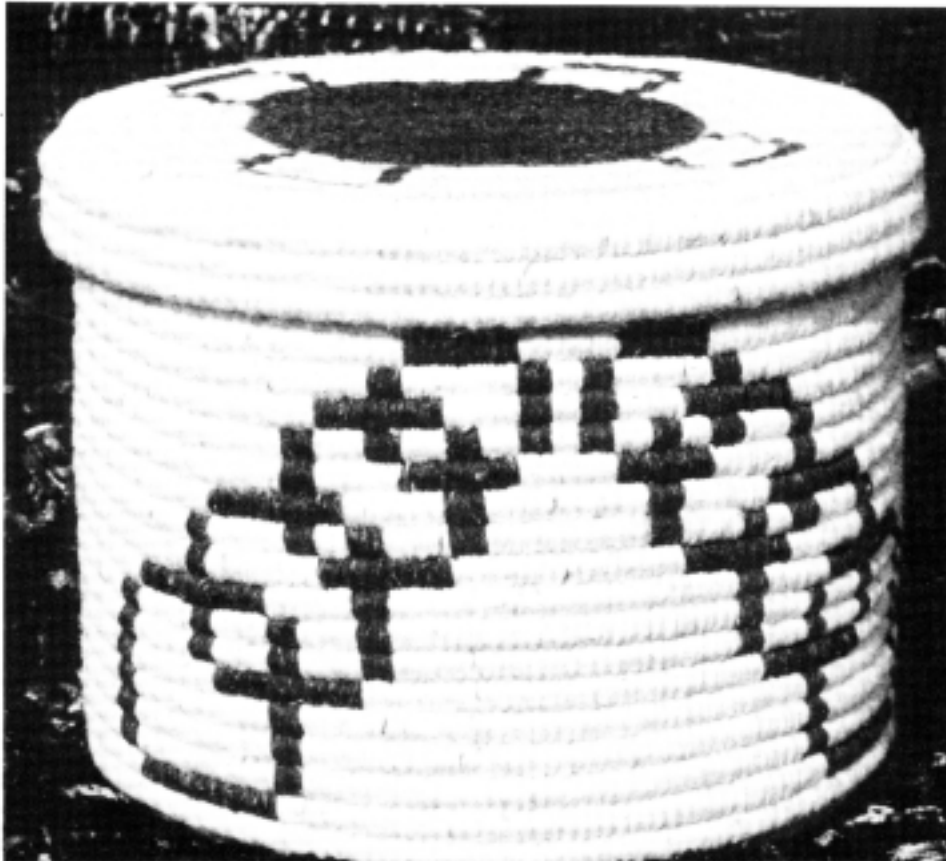
I found both Landes patterns exciting, and the year flew by as I graphed variations and produced fiber projects. I decided to call the workshop "Variations on a Landes Theme," because as a musician I began to realize that these design bits which I was developing into new variations were similar to bits of melody that a composer uses to build his complex sonatas, concertos and symphonies. The notes of the melody could be found anywhere, Bach or Carmichael, Landes or Davison, but as they are combined with a change of color or feeling, and as the instrumentation is changed, the overall idea becomes new whether the composer is working in the field of music or weaving.

My favorite was pattern #61 (Fig. 1) which looked like an idea sheet from an artist's sketch pad. The smallest motif became my first companion. We spent days together in paper play, and many projects were developed from the



designs produced. I particularly liked one concept which was a line of overlapping blocks increasing in size. I found it exciting to vary the number, the positions and to play one line of blocks upon another (Fig. 2). After trying a variation of the design in a large coiled hassock (Photo 2), I liked the dramatic effect produced by using very dark brown on an off-white background, and I wanted to try the same design idea in something that would be primarily tapestry woven. I decided on a chaise or floor lounge cushion, using the same materials as those in the hassock (Photo 1).

Bill Coutts



2. This coiled storage hassock is ornamented with a part of the design variation from Figure 2 using Berber wools.

I adapted the block design for the woven panel which would be long and narrow (72" x 28") (1.83m x .71m). The design retained the look of continuity, yet the lines were broken top to bottom as well as side to side which made it interesting to the eye.

The project could be woven on a tapestry loom or on a floor loom. I used the latter.

My warp was a medium-heavy off-white Berber wool which was sett at 4 to the inch in an 8-dent reed. The weft in the background was the same off-white Berber as the warp with dark brown Berber for the design. I threaded the loom for twill

(1234), and the treadling was 1 + 3; 2 + 4 to produce plain weave. I used plain weave throughout, interlocking the design weft with the background weft. I beat the work firmly to make a hard tapestry surface, because the cushion would receive heavy wear. Having added  $\frac{3}{4}$ "

(2 cm) extra length to the panel, top and bottom, I darned the warp ends back into the alternating warp ends for  $\frac{3}{4}$ " (2 cm) to finish off the work. Below the inserted ends ( $\frac{3}{4}$ ", 2 cm), I machined stitched across the width several times to strengthen them.

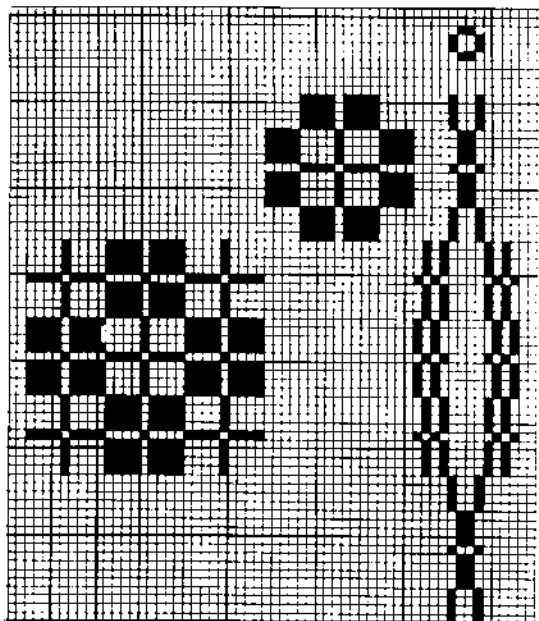


FIGURE 1

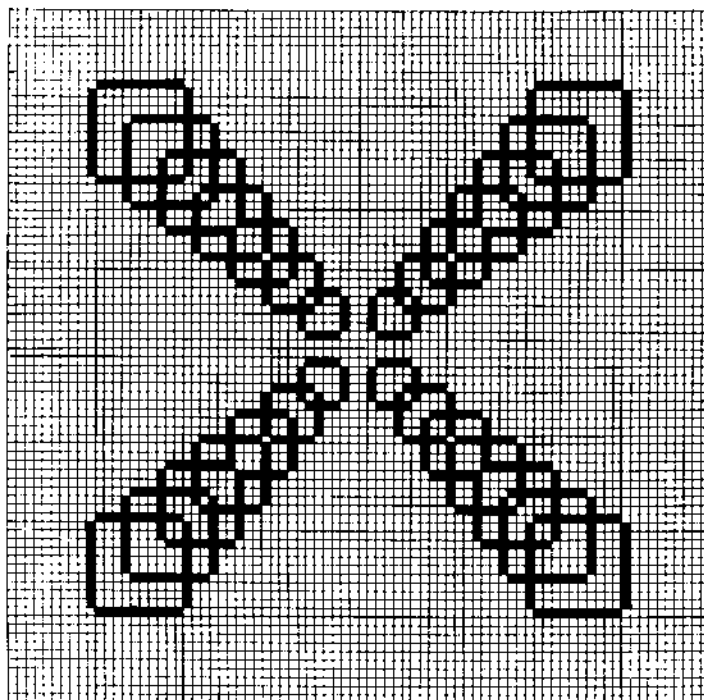


FIGURE 2

Since the cushion was to lay flat on the chaise or floor, I wanted to create the illusion that the piece was rising from the surface without pleats or darts to break the smooth line. I chose to add a wide framelike band of twining, using the dark Berber yarn of the design. Twining would give strong support to the edge and allow for a smooth joining of the tapestry fabric and the framelike band. The twining was done on an elastic warp which was placed under tension all around the tapestry panel (Fig. 4). When the tension was released, the warp could contract and make the woven panel puff up inside the framelike band for the cushion shaping.

I chose a knitted type of 1/4" (.64cm) macrame cord for the twining warp, because it is very elastic (Photo 3). This cord had an elasticity of 1" stretch for every 6" length of cord. (All cords vary.) The heavy yarn, used for the twining wefts, caused some resistance to the contraction of the warp when the band was released from tension.

The measurements of the warp ends were made with the cord relaxed. Using the panel perimeter length, I allowed extra for corners, circumference increase and a few extra inches for splicing. I placed straight pins through the center of each cord (Fig. 4).

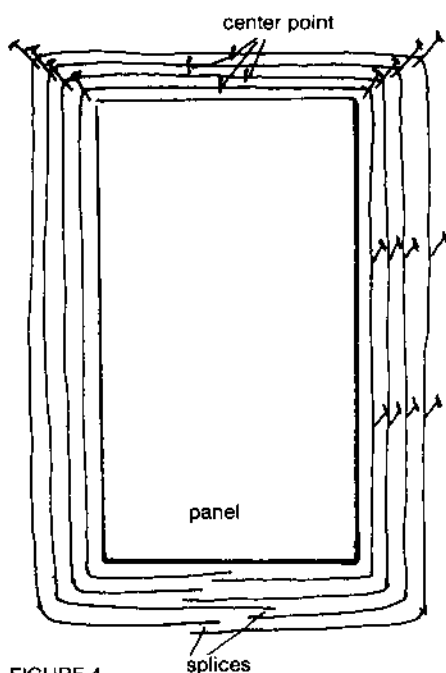


FIGURE 4

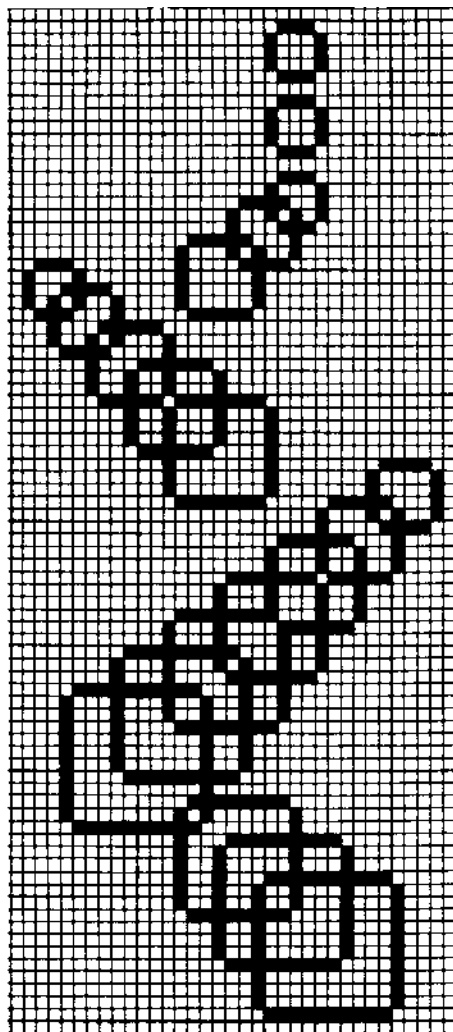


FIGURE 3

Leaving about 3" (7.6cm) at the top of a large celotex board, I pinned the panel in place. The board was not large enough to take the entire panel at once, therefore I had to shift the work up when it was half-completed. Starting with the shortest cord, I placed the center point at the top center of the panel, pinning it over the machine stitching.

Working to one side, I stretched the cord and pinned it slightly past the corner of the panel. Stretching the cord down the side, I secured it with several pins, and then repeated the process with the other end of the cord. Leaving a space of about 1/4" (.635cm) between them, I pinned all of the remaining cords, from shortest to longest, staggering the center points on the top.

Starting the twining at the top center point, I needed a 6' (1.83 m) length of dark brown wool through the row of tapestry weft just inside the machine stitching. I used blunt needles, placing one on each end of the now double twining wefts. The ends should be different lengths so that when new lengths are added to the twining, they are not added at the same time. I twined each way across the top and down the sides, interlocking the twining wefts into the edge of the panel (Fig. 5).

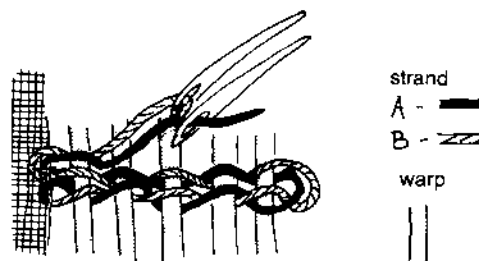
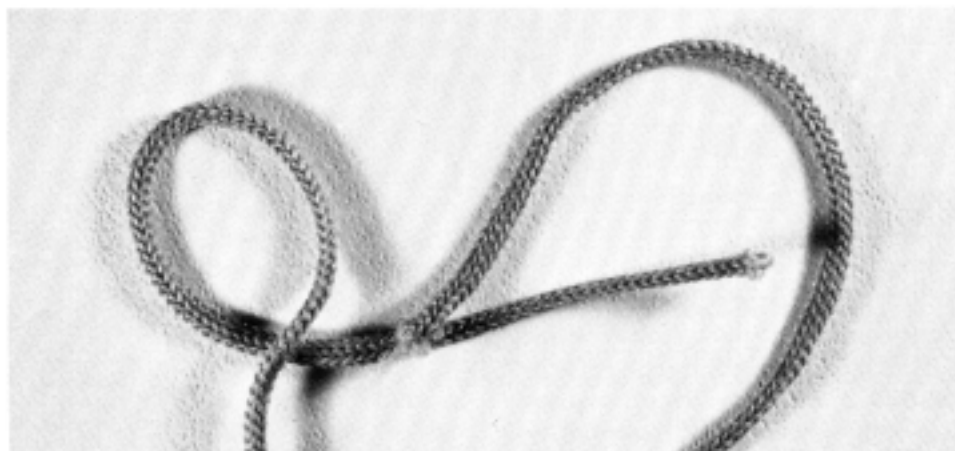


FIGURE 5

When reaching the edge of the board, I unpinned the work from the board to shift it upward. I stretched about 4" (10cm) of the completed band at the edge of the work, after pinning each warp to the board to maintain proper tension. Stretching each warp, I se-



cured it along the sides and at the bottom corner.

The staggering of the center points at the top placed the splice points of the warp in staggered order on the bottom. When all of the warp ends had been secured, the ends were overlapped 1", (2.54cm) and the excess length trimmed off. The ends were tapered carefully, because knitted cords ravel and slough off when too long a taper is made. Since cords cannot be glued and pinned under tension for proper adhesion, I unpinned each cord pair, marking the overlap points on each cord with a pin. I unpinned enough so that the cord was completely relaxed. After the pair of cord ends were glued, I pinned them to the board, one on top of the other to dry. When all of the glued cords had dried, I sewed the splice points with waxed linen to further secure them since they would be under tension while twining. After restretching and repinning them to the board, the twining was completed on the remainder of the band.

After removing the finished piece from the board, I turned it face down on a flat surface to stuff the cavity. I cut five layers of quilt fiberfill to fit the cushion opening. The 3/4" (2cm) tab ends on the panel were tucked between the layers of fiberfill. I used enough layers of stuffing to make the cushion soft and fluffy.

Since it was never to be turned over in use, I chose a strong piece of heavy upholstery fabric for the backing, hand stitching it to the inside edge of the twining hand. The chaise lounge cushion shown in Photo 1 was the result.

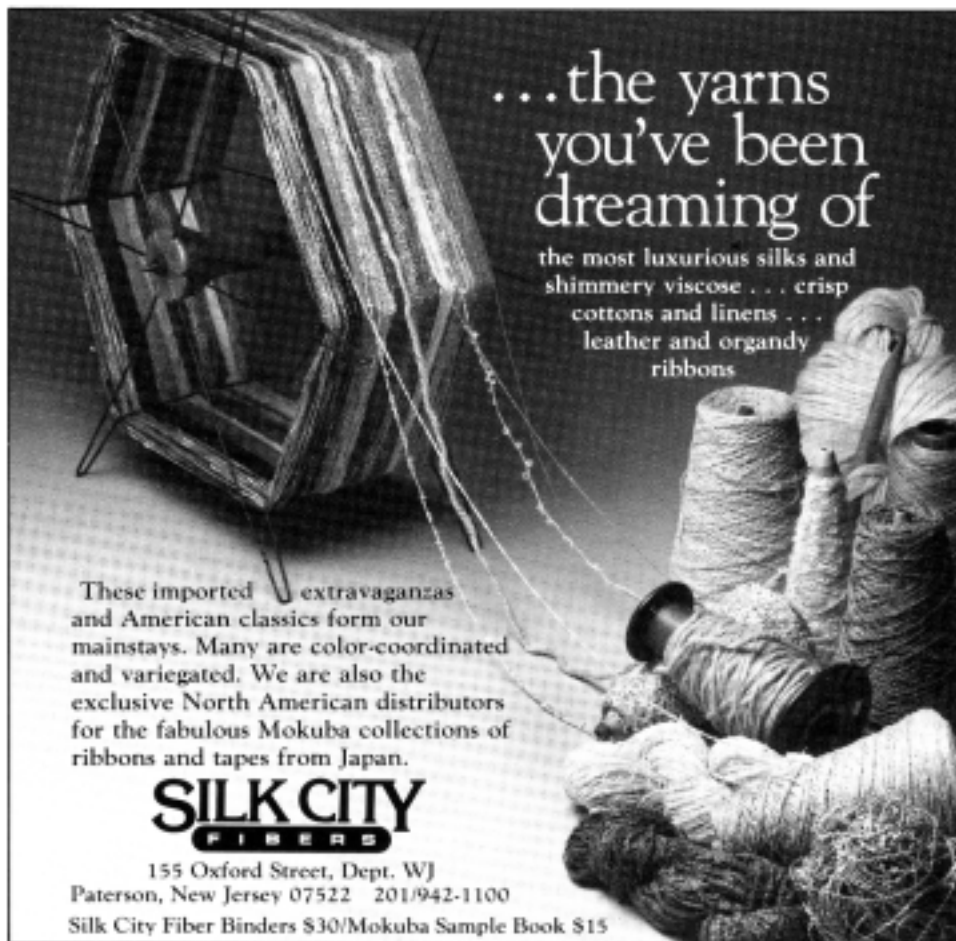
**ABOUT THE AUTHOR:** *Lucele Coutts was introduced to weaving while at UCLA. Although she has woven on a textile loom, she prefers tapestry weaving and basket-weaving. She is a member of the Southern California Handweavers' Guild and was twice editor of the TIE-UP. Her work is in private collections throughout the United States, Puerto Rico, Mexico, Canada and Norway. She taught fiber techniques at Pepperdine University and La Verne College in the southern California area, and is the author of BASKETS AND BEYOND, published by Watson-Guptill.* ■

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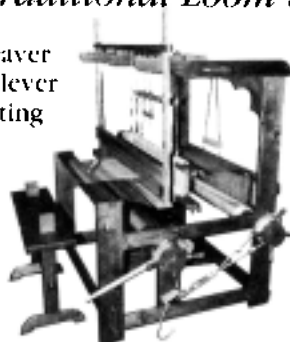
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# SHAFT-SWITCHING

by Clotilde Barrett

## WHAT IS SHAFT-SWITCHING?

Shaft-switching is a technique by which the threading of a warp can be altered while the warp remains fixed to the loom.

Usually, if one wants to change a threading, the warp is left loose at one end and this end is removed from the unwanted heddle and passed through the eye of the heddle of the appropriate shaft. If there is no heddle where one is needed, the weaver usually makes a string heddle as the substitute for the missing heddle. This is often referred to as a *repair heddle*.

After a loom has been threaded, the heddles can usually *not* be moved from one shaft to another unless the heddles are of a special type, such as the plug-in type repair heddles or string heddles that can easily be tied and untied from both the upper and lower heddle bar. If a warp end happens to be threaded on such a movable heddle, then shaft-switching is very easy though not always practical: shaft-switch by moving a movable heddle, carrying a warp end, from one shaft to another. The term, shaft-switching, and the use of this technique to create patterning is credited to Peter Collingwood, who published the technique in a book *The Techniques of Rug Weaving*.

## DEVICES FOR SHAFT-SWITCHING

Peter Collingwood, when he first introduced the technique to handweavers, proposed to switch a warp thread from one shaft to another by means of a set of two string loops (Fig. 1). The warp end to be switched between shafts I and II is

not threaded on either shaft to begin with. Instead, the end is left floating between the back beam and the apron rod to which it is attached. The warp passes through the harness frames I and II between two empty heddles, one on shaft I, the other on shaft II. A string *a* goes around the top of frame I, through the eye of the heddle on shaft I, around the floating warp end, back through the eye of the heddle on shaft I and is tied into a loose loop over the top of frame I. A second string *b* goes around the top of frame II, through the eye of the heddle on shaft II, around the floating warp end, through loop *a*, back through the eye of the heddle on shaft II and is tied to form a loose loop over the top of frame II. If loop *a* is shortened by means of a slip knot, the warp end will be pulled toward the heddle of shaft I and act as if it were threaded on that shaft. If the slip knot is released and loop *b* is tightened by means of a slip knot, the warp end will be pulled toward the heddle of shaft II and act as if it were threaded on that shaft.

Peter Collingwood has improved this technique over the years in order to eliminate the slow and awkward motions of tightening and releasing the slip knots. He himself uses a complex home-built mechanical device which consists of a set of levers, each of which is linked to a floating warp end. The levers are lined up on an axis on top of the castle and can be switched to two positions which pull the warp end either to shaft I or to shaft II. (The working plans for this shaft-switching system are available from *The Weaver's Journal Publications* for \$5.00.) This device requires some mechanical altera-

tions of the loom and is only recommended for weavers who intend to use the technique extensively or who are mechanically inclined.

Inspired by Peter Collingwood's shaft-switching device which uses two interlocking loops, Jane Busse developed her own system using one single longer loop. The two strings *a* and *b* mentioned previously, are not closed into loops but are replaced by one continuous string (as if *a* and *b* were tied end on end), which follows the path of *a*, then of *b* before it is tied into a closed loop with two bouts (Fig. 2). Bout *a* is tightened by pushing a tightly wrapped piece of wool yarn *c* close to the top of frame I. The warp end then acts as if it were threaded on shaft I. Bout *b* is tightened by sliding the wrapped yarn *c* close to the top of frame II. The warp end acts now as if it were threaded on shaft II.

Having discussed shaft-switching devices in several workshops, I have experimented with many ideas for shaft-switching devices which were suggested. All started with a floating warp thread. Adjacent to it were empty heddles on the shafts to and from which the end needed to be threaded. Easy solutions to attach the floating end to and from the eyes of adjacent heddles were small safety pins, short tie strings, tie wires, or small latch hooks. These devices were either too clumsy, too weak or decreased the size of the shed. The best solution was the use of #12 or #14 safety snaps that come with fishing swivels. The swivel has to be cut off and the safety snap has to be threaded onto the floating warp end before it is tied to the apron rod (Fig. 3). The disadvantage of these

pins is that they sometimes fall apart and that their opening and closing is hard on the fingernails. The first problem can be avoided by using a pin that opens on both ends (Fig. 4). These are also available in fishing departments. They can be attached to the floating warp end while it remains tied on. The second problem can be solved by using jewelry pliers.

Richard S. Shultz and William Koepp, two American weavers/inventors have kindly shared with me the workings of their shaft-switching devices. These require some mechanical alterations of the loom and are described on pp.32 and 35 of this issue.

### WHAT TYPE OF WEAVE STRUCTURES ARE USED WITH SHAFT-SWITCHING?

There is no definite answer to this question because weavers will continually explore new applications of this basically very simple technique.

To my knowledge, the technique of shaft-switching works best with threadings that are based on tie-down shafts and pattern shafts. A simple example of such a threading is the two-tie 4-end block draft, better known as the Summer and Win-

ter draft. Fig. 5 shows a typical two-tie 4-end block threading. Each unit has two tie-down warp ends and two pattern ends. For shaft-switching, the pattern ends are left floating with an empty heddle on either side: one on shaft 3, one on shaft 4. This is indicated in the draft by the symbol 4/3. Note that for easy shaft-switching, shafts 3 and 4 are often the frames which are the closest to the weaver.

Shaft-switching is most practical for a warp that has a wide sett and is therefore most popular for rugs and wall hangings.

The weaving for a rug with a two-tie block draft is done with two wefts *D* (■) and *L* (□). Block A is threaded on pattern shaft 3; block B is threaded on pattern shaft 4. The pick sequence is as follows:

<i>D</i> (■) in block A	1 + 4 up	Weft <i>D</i> (■)	Weft <i>L</i> (□)
<i>L</i> (□) in block B	2 + 4 up	1 + 3 up	2 + 3 up

Alternate a *D* pick and an *L* pick. Start the *D* shuttle and the *L* shuttle from opposite sides.

To weave a selected area of the rug *D* (■), shaft-switch the floating pattern warp ends of that area to shaft 3 which will turn that area into an A block. To weave an *L* (□) area, shaft-switch the corresponding pattern ends to shaft 4 (B block).

### OTHER POPULAR DRAFTS FOR SHAFT-SWITCHING

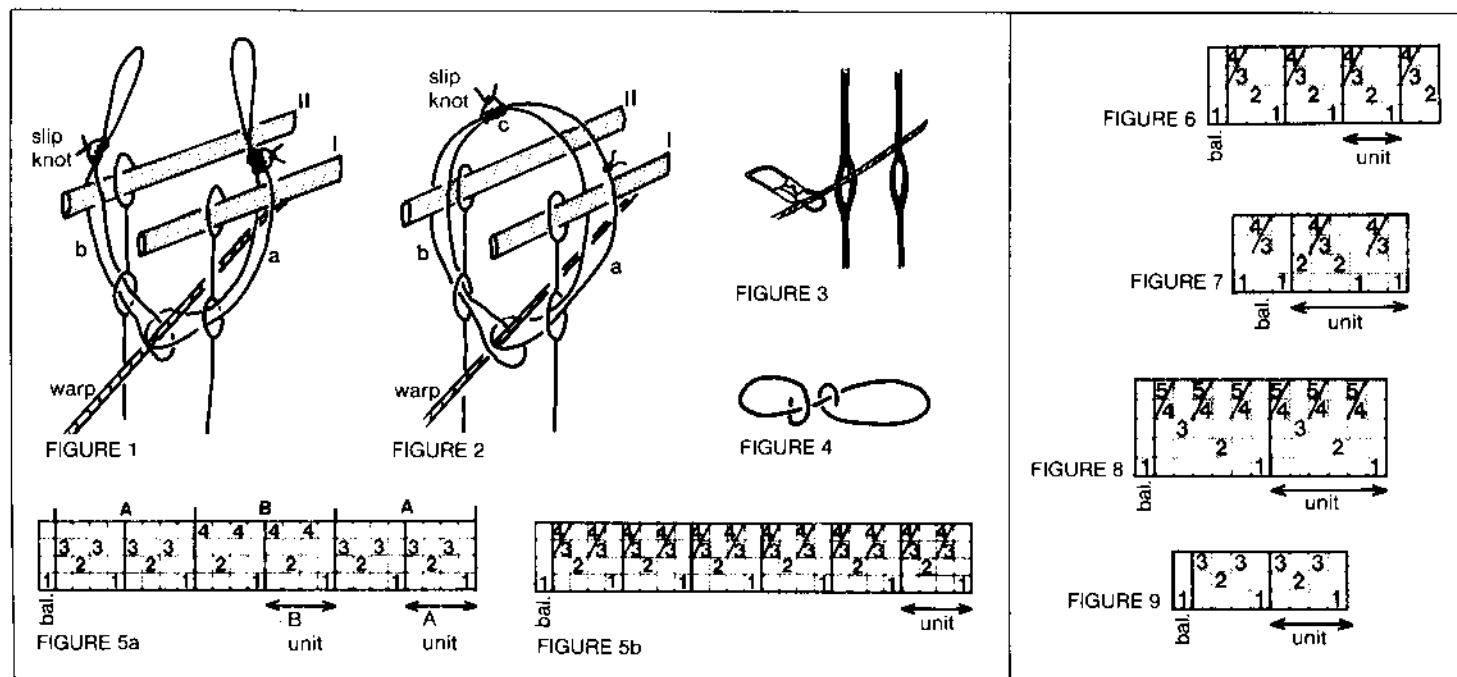
- Two-tie 3-end draft; see Fig. 6.
- Two-tie 6-end draft; see Fig. 7.
- Three-tie 6-end draft; see Fig. 8.

### SHAFT-SWITCHING VERSUS PICK-UP

Pick-up techniques are other ways to change the threading of a warp while it remains fixed to the loom. Pick-up and shaft-switching give the same design capabilities for rugs woven on a two-tie block draft. The threading draft for a two-tie 4-end draft is given in Fig. 9. The weaving is done with two wefts *D* (■) and *L* (□). The pick sequence is as follows:

<i>D</i> (■) in block A	Weft <i>D</i> (■)	Weft <i>L</i> (□)
<i>L</i> (□) in block B	1 + pattern warp of <i>L</i> area	1 - pattern warp of <i>D</i> area
	2 + pattern warp of <i>L</i> area	2 + pattern warp of <i>D</i> area

Weave the 2 *D* picks (same pick-up), then the two *L* picks (opposite pick-up). Start the *D* shuttle and the *L* shuttle from opposite sides. Repeat the 4 picks until there is a change in the design.



**WHEN IS  
SHAFT-SWITCHING  
MOST PRACTICAL?**

Usually shaft-switching is only practical when 6 or less devices are needed per inch. This leaves out fine cloth and close setts. For these weaves, pick-up methods may be the most practical alternative. Shaft-switching is mostly limited to coarse weft-faced fabrics.

**Example 1, Fig. 10**

A design of great simplicity for which the profile draft shows 6 blocks or less (4 in our example), should be done harness controlled. For most two-tie drafts a 6-block design can be woven on 8 shafts. Our example requires 6 shafts.

**Example 2, Fig. 11**

This design has 8 blocks and can be woven on a 10-shaft loom using a two-tie block draft. Many weavers have this harness capacity. However, a close look reveals that this

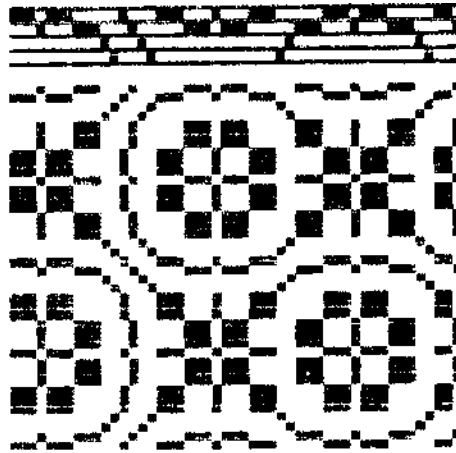


FIGURE 10

pattern has 10 treading blocks. With one treadle tied to shaft 1, another to shaft 2 and using the second foot to operate the pattern shafts, this weave would require 22 treadles. Even if those treadles were available, the treading could be impractical because it is difficult to establish a weaving rhythm if the feet have to travel over such a large number of treadles. Here the shaft-switching technique is recommended.

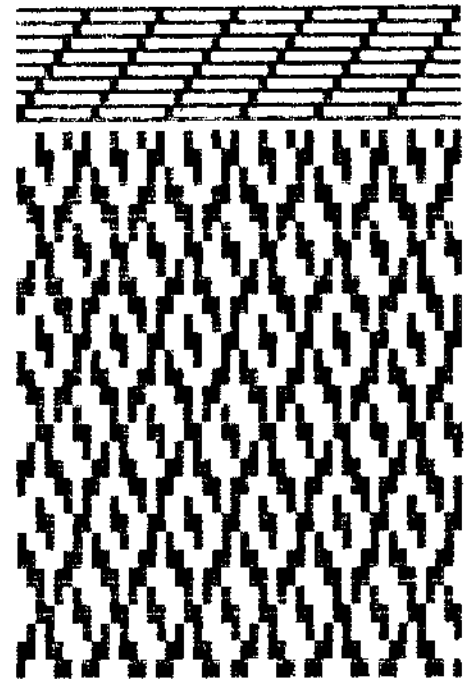


FIGURE 11

**Example 3, Fig. 12**

This seemingly simple pattern has 24 blocks and would require 26 shafts if woven on a two-tie draft.

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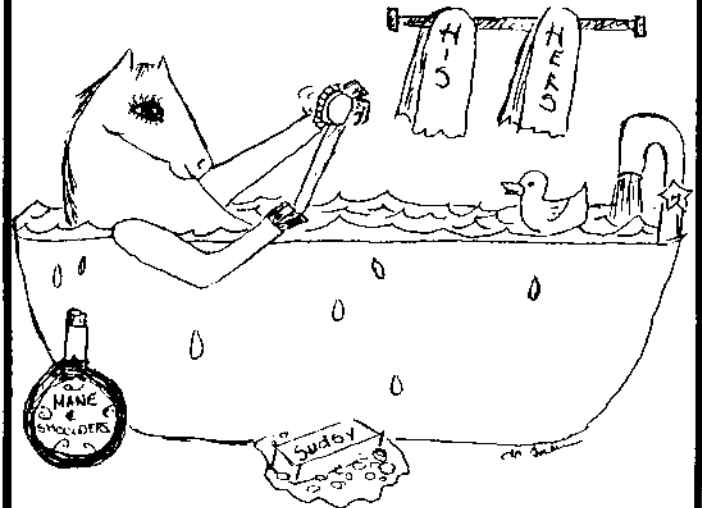
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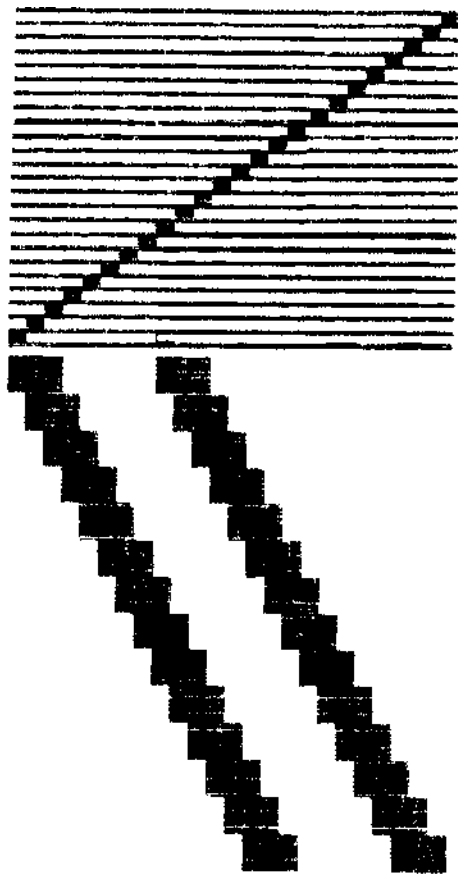


FIGURE 12

Shaft-switching is recommended for this type of patterning.

#### Example 4, Fig. 13

The pattern areas occupy a small portion of the project. In such cases it is often faster to do the pattern with pick-up techniques.

### SELECTING A WEAVE STRUCTURE FOR A SHAFT-SWITCHED RUG

On a 4-shaft loom, the weave structures are restricted to two-tie block drafts. The threadings of Figs. 5, 6, and 7 are the most frequently used.

The two-tie 4-end of Fig. 5 has 3-span weft floats. The warp is sett at 5 (sometimes 6) epi. There are two shaft-switching devices per unit. Half units can be shifted as well as whole units. The opposite color is hardly visible on the face of the cloth.

The two-tie 3-end draft of Fig. 6 has 2-span weft floats. The warp is sett at 4 (sometimes 5) epi. There is one

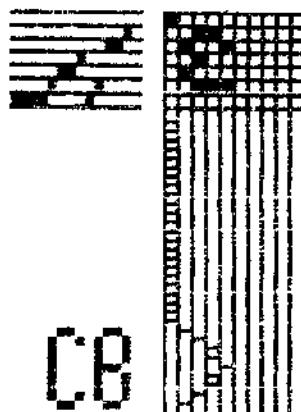


FIGURE 13

shaft-switching device per unit. The opposite color is frequently visible on the face of the cloth.

The two-tie 6-end draft of Fig. 7 has 3-span weft floats. The warp is sett at 5 epi. There are two shaft-switching devices per unit. Half units can be shifted as well as whole units. The opposite color is visible on the face of the cloth.

On a multi-shaft loom, three- or four-tie drafts can be experimented with.

Each threading system necessitates a special selvedge threading and/or a floating selvedge.

The texture of the cloth, the size of the float, the amount of opposite color visible on the face, the amount of detail in the design, and the type of patterning will dictate which of the draft systems is the most appropriate.

### PATTERNS FOR SHAFT-SWITCHING

All patterns for shaft-switching can be drawn out on graph paper in black on white. Sometimes 1 square of graph paper is equivalent to 1 threading unit, sometimes to 1/2 threading unit. The latter is true if the designer works with 2 shaft-switching devices per unit or if the patterning has areas of vertical pin stripes produced by pick and pick progressions of the weft.

Step type patterns are the most frequently used but low angle smooth diagonals and curved effects are possible.

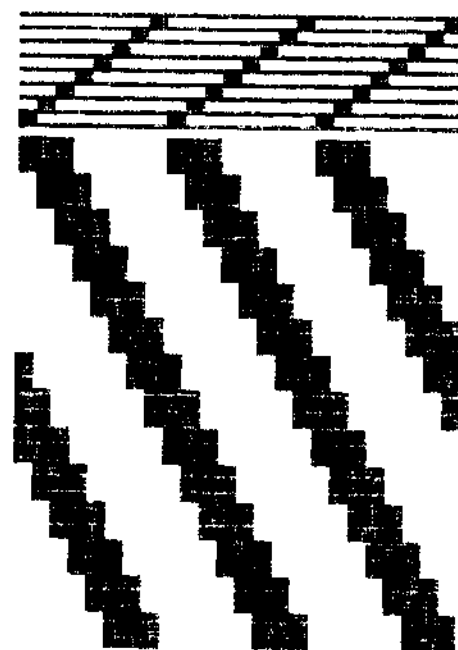


FIGURE 14

### COMPLEX SHAFT-SWITCHING ON 4 SHAFTS

The article by Andrea Green in this issue of *The Weaver's Journal*, p. 36 *Shaft-switching to Create Tapestry Effects*, shows double shaft-switching whereby three color textures can be used on the same project: L (□), D (■) and LD pick and pick (◼).

### COMBINING HARNESS CONTROLLED PATTERNING AND SHAFT-SWITCHING

The rug design of Fig. 12 has 24 blocks and could be woven on 26 shafts. The rug design of Fig. 14 is similar, has only 8 blocks and can be woven on 10 shafts. The difference is that in Fig. 12, the two twill lines are isolated on a blank ground. This blank ground can be an additional pattern block (the 9th) which decreases in size to the right and increases to the left. The way to increase pattern block 9 (threaded on shaft 11) is to shaft-switch the pattern warp ends at the left edge and right edge of the two twill lines from the blocks on which they are threaded (shafts 3 through 10) to the blank block (shaft 11).

Examples of these techniques will be discussed in detail in the next issue of *The Weaver's Journal*. ■

# SHAFT-SWITCHING DEVICE OF WILLIAM KOEPP

Editor: William Koepf calls his device a linear shaft switcher and it is especially designed for a countermarch or counterbalanced loom.

This device uses, of course, the shaft-switching principles that Peter Collingwood invented, but in a different form. It puts the switching mechanism closer to the weaver, and the rug pattern can actually be seen on the device, by the position of the locking collars. I collected a pile of coat hangers for the wires, and bought the hardware in a hobby shop and a hardware store. The crude sketch (Fig. 1, Photo 2) shows the switcher in action, it does not show the shafts of the loom, which are beneath the switcher. This shaft-switching mechanism does not work as fast as Collingwood's lever system, but

it is closer to the weaver, and is not as complicated to build.

I use the 3-end block draft shown in Fig. 2. The loom has to be threaded so that #1 shaft is the farthest from the weaver, #4 shaft is the closest.

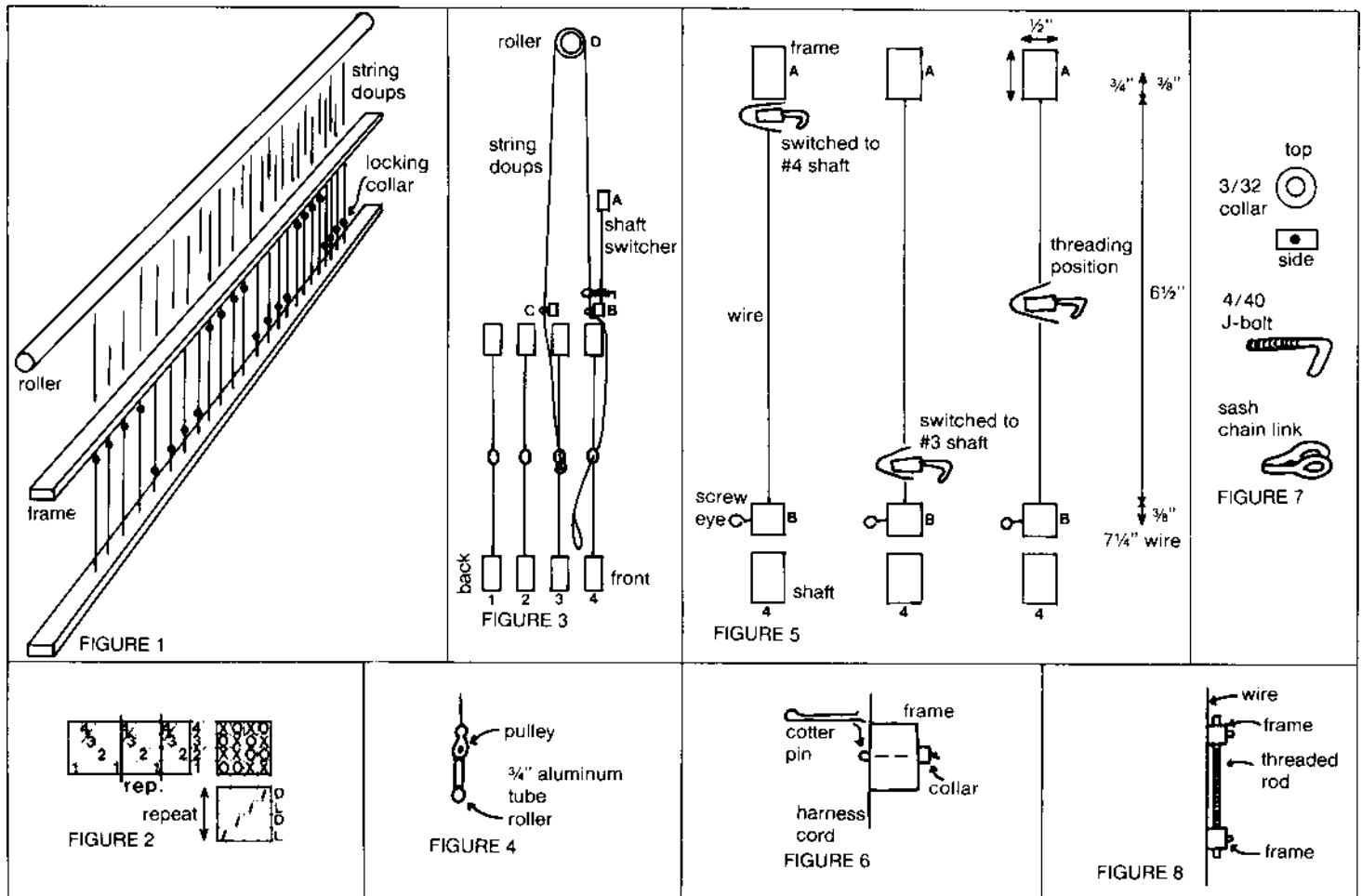
The sett of the warp is 6 epi. There is one pattern warp end per 3-end unit. Thus, there is one pattern warp end to be switched from #3 shaft to #4 shaft per  $\frac{1}{2}$ " and consequently one shaft-switching device per  $\frac{1}{2}$ ". There are 100 devices on a 50" loom. I recommend you read *The Techniques of Rug Weaving*, by Collingwood, for the complete story.

This switcher is not for a jack loom. It uses a roller D, to carry the doups (string loops) to the #3 shaft, (Figs. 1 and 3) and the #4 shaft must

move in an opposite direction from #3 shaft, and at the same time. Shafts #4 and #3 are the pattern shafts and are the closest to the weaver. If you have a counterbalanced loom, and it has a rather short roller, replace it with one as long as your reed, and hang it from pulleys. A countermarch loom will have to have a roller installed (I used an aluminum tube,  $\frac{3}{4}$ " dia.) (Fig. 4 and Photo 3). Adjust your tie-up, so #3 and #4 shafts have NO play. You don't want the string loops to move in the heddles, they will wear faster.

## Construction of the linear shaft-switcher

Let's say your shafts rise and fall 3" each, that's a total of 6". Cut the wires at  $7\frac{1}{4}$ "; 6" for the shed,  $\frac{1}{2}$ " for the collar,  $\frac{3}{8}$ " on top and  $\frac{3}{8}$ " at the

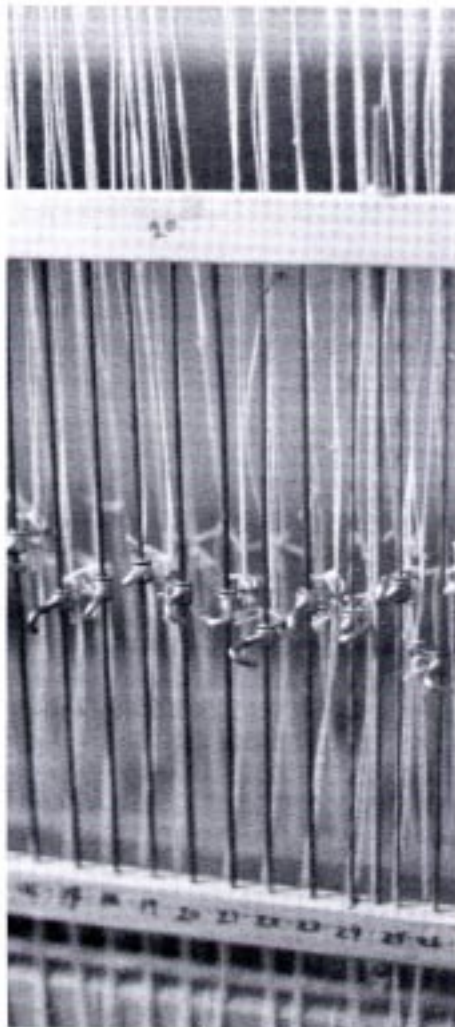




bottom to insert into the wooden frame. The wooden sticks of the frame are  $\frac{1}{2}$ " wide,  $\frac{3}{4}$ " high and as long as the length of your reed, or whatever size rug you plan to weave. I made mine 48" wide, on a 60" loom. Cut the wood for the frame top and bottom (A & B) plus one extra piece for shaft #3 (C). This piece will only hold guiding screw-eyes. See Figs. 3 and 5. Mark all of them at  $\frac{1}{2}$ " intervals. Drill holes for wires in the  $\frac{1}{2}$ " face on the two frame pieces. Holes should be  $\frac{3}{8}$ " deep. Drill other holes every foot, for the threaded rods which holds the frame together. I used  $\frac{6}{32}$  threaded rod. Place these holes between the others, so the collars do not rub. The frame is held to the loom cords by cotter pins and a collar (Fig. 6), but any method will



1. William Koepf's shaft-switcher is a frame with locking collars placed above the shafts of the loom. This pattern was inspired by Barbara Hand's article, *The Weaver's Journal*, Issue 28, Spring 1983.



2. Shaft-switcher, showing top and bottom of frame, the wires and the locking collars. Doups are in the background.

do, as long as the frame cannot move up or down. Place small screw-eyes along the base of the frame, as guides.

The front of the lower frame should be numbered. I like to use a center in my designs, so I made the center wire "0", then I numbered in each direction left and right, each wire, out to the selvedge. Each wire is  $\frac{1}{2}$ " from the next wire.

I recommend that you warp the warp on two beams, one for the warp ends of the switching shafts, 3 and 4, as they tend to get looser after about four feet of the rug is woven. This is not a must, of course, and the usual makeshift methods can be used instead.

The moving collars ( $\frac{3}{32}$ ) of the shaft-switcher are locked with a  $\frac{4}{40}$  J-bolt. This assembly is sandwiched within a sash chain link and threaded on the wires of the shaft-switcher (Figs. 5 and 7).

If you cannot find any J-bolts, merely buy brass bolts,  $\frac{4}{40}$  thread,  $1\frac{1}{2}$ " long, and bend them to an "L" shape. If you find that tightening the J-bolts is tiring to your fingers, just keep a thimble handy, or a finger from an old glove.

The wires I used measured about .075 on my micrometer. It is the thinnest that I would try with  $\frac{3}{32}$ " collars. I normally don't like to use found materials in projects, since I feel it implies that the thing is very, very simple to throw together, but .075 wire from the coat hangers met my requirements perfectly. I used a  $\frac{5}{64}$  drill bit (.078") for the wire holes,  $\frac{3}{8}$ " deep,  $\frac{1}{2}$ " apart. Since the collars are  $\frac{3}{32}$ ", you could use  $\frac{3}{32}$ " wires, or you can also drill out  $\frac{1}{16}$ " collars to fit the particular wire that you want to use, but it is a bit more work, also

Place the wires into the lower frame holes, the collars are fitted with the sash chain links and slid onto the wires, then the top frame piece is placed onto the wires. Next, the threaded rods are slid into their holes, and a nut is placed at both ends, locking the frame onto the wires (Fig. 8). Give the bottom end of the threaded rod a few taps with a small hammer, and the nut will not vibrate off (or use a cap nut).

Make your doups so that the shaft-switching pulls them snug to the heddle eye. Hang the roller (D) as low as possible. The roller is barely above the shaft-switcher. We want



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3. Shaft-switcher mounted on a counter-march loom with vertical jacks. The doups are ready to be threaded.

the doups as short as possible. Peter Collingwood advised me to have the doups interlock at the heddles, so that they do not try to creep toward the reed. I prefer to keep the doups separate, and deal with the creeping when it happens. I like the shafts to rise up straight, and keep the friction to a minimum.

### Setting up the loom

Start the threading with the right selvedge, it is on shaft #2, then the next warp end goes through the doups of #3 and #4 shafts, next end goes through a heddle on #1 shaft, and so on, until the left selvedge is reached, it goes through a heddle on #1 shaft. See Fig. 2.

In the tie-up, X means sinking shaft, and O means rising shaft. Try not to have any slack between #3 and #4 shafts, no hesitation. There is no tabby available, a "mock tabby", for starting and ending is: shaft 1 & 2 rising on one treadle, and 3 & 4 rising on another treadle.

For the treading, repeat as shown in Fig. 2. Design changes are usually made after the 2 + 4 shaft rise. It takes two or more repeats to square out one threading unit. Two colors are used. The shuttles are thrown dark, light, dark, light, or the opposite, depending on your design.

I recommend using a temple/stretcher while weaving rugs.

### Here's how I started the weaving

After sleying the 6 epi reed, and tying to the apron rod, I wove 4 thin wooden slats, then about 1" of old thick yarn, then 1/4 to 1/2" of mock tabby, using *one* shuttle, of the background color of the design, then I used this pick order:

- lift 2 + 4, weft is dark, throw right to left.
- lift 2 + 3, weft is light, throw right to left.
- lift 1 + 4, weft is dark, throw left to right.
- lift 1 + 3, weft is light, throw left to right.

Now a change can be made in the shaft-switching design, if so desired.

Note: If you don't have a hobby shop near you, here are four mail order hobby businesses :

TOWER HOBBIES, P.O. Box 778, Champaign, IL 61820.

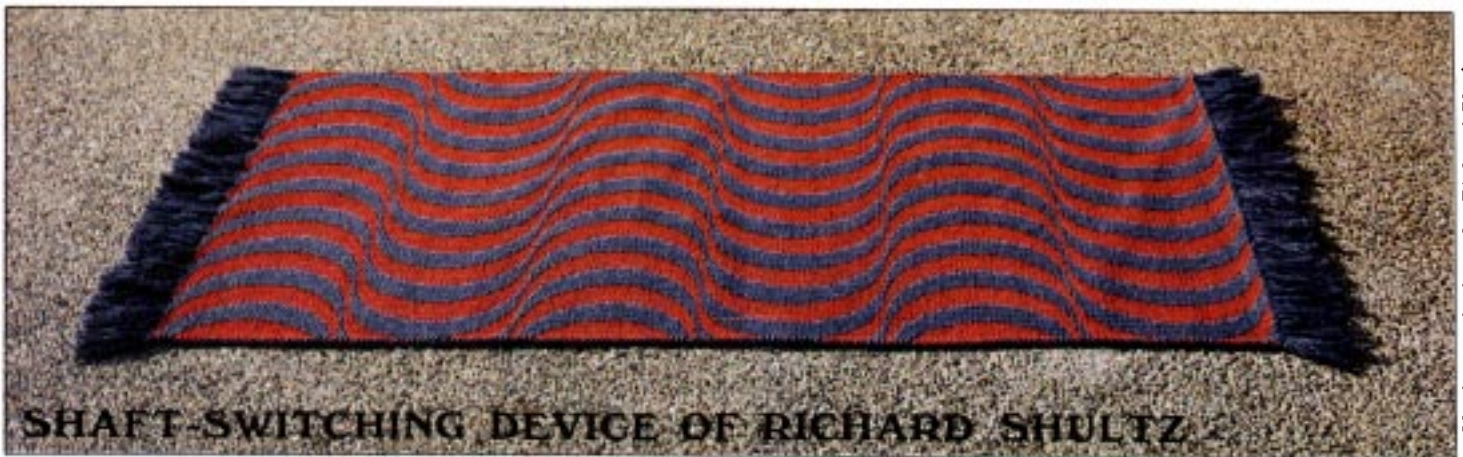
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There are many other sources for these hobby supplies, but I don't have the energy to list any more!

**ABOUT THE AUTHOR:** William Koepp is a California weaver with four years experience. His principal interest, however, is in the weaving machines used by the early weavers. He hunts for old books and studies them until he understands how the mechanisms work, often making drawings and models of the machines. He has built a counterbalanced loom from plans he found and he designed and constructed a counter-march loom. He also designed and built a device which he calls "Doublejack" to eliminate floating selvedges. His wife, Gaye, is a weaver and she advises him on the designs and colors he uses in his woven projects. ■



1. Shaft-switched rug by Richard Shultz.

Ingenious weavers have been building-shaft-switching devices that are quite different than those described earlier in this issue. Richard Shultz of Storrs, CT, weaves beautiful rugs on a completely home built system: loom, shuttles, shaft-switching system, etc. His entire concept of weaving is quite personal. He therefore creates rugs of great originality. The shaft-switched rug shown in Photo 1 has a wool weft of two colors, red and gray. The warp is the same gray yarn.

**Warp:** 2-ply rug wool (gray).

**Sett:** 22 epi with special denting of 1, 1, 3, 3, 3, in a 10 dent reed.

**Weft:** Same rug wool as warp, used three-fold. Color *one* is the same as the warp, color *two* is red. Richard Shultz can ply the 3-weft strand together with absolute control over the twist. A system he invented himself!

**Width in the reed:** 36".

**Threading:** The threading is based on the 2-tie 3-end block draft of Fig. 1 in which the pattern warp is switched between shafts 3 and 4 (the two shafts closest to the weaver). The threading of Richard Shultz differs, however, in that the pattern warp end of a threading unit is replaced by three groups of 3 threads. Each group of 3 acts as one working end and has its own shaft-switching device.

The threading unit is shown in Fig. 2; it has 5 working ends which occupy  $\frac{1}{2}$ " of the reed. Each unit has 3 shaft-switching devices. Thus, there are 6 S/S per inch.

The design can be graphed out on 6 squares/inch graph paper. This fine grid allows great detail and smooth moving curves.

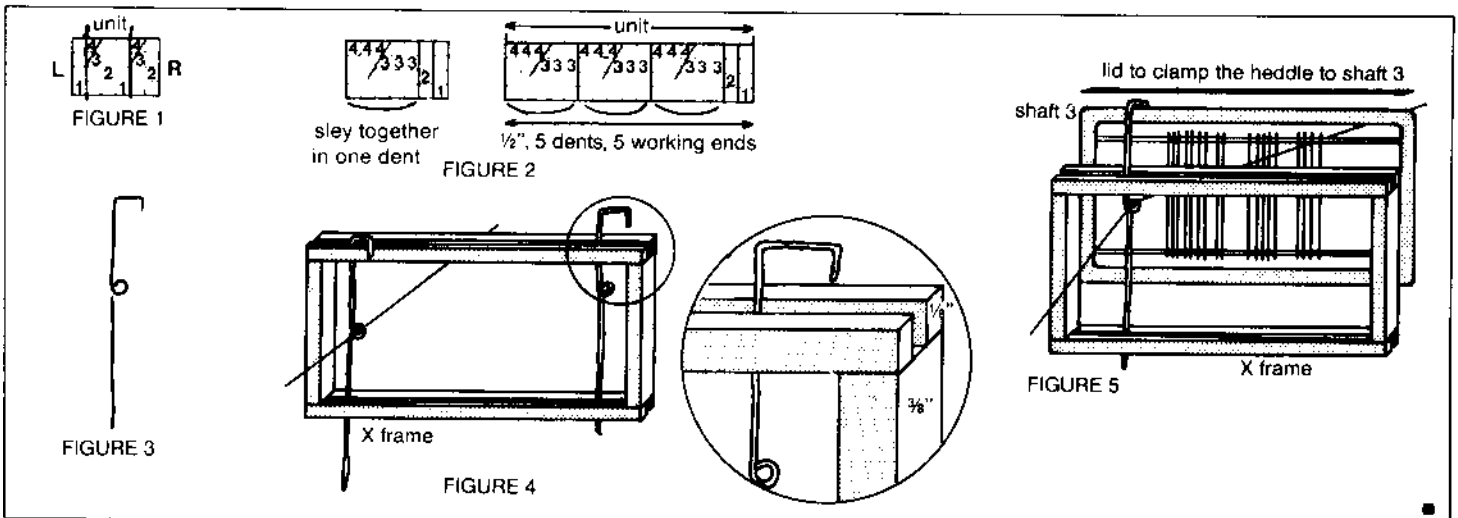
For the rug shown, Richard Shultz put the design curves of the rug pattern into a computer, also the number of picks per inch. In return, the computer gave instructions as to when and where to shaft-switch

to weave the curvilinear design.

His shaft-switching device involves an auxiliary shaft positioned in the same way as an ordinary shaft between the pattern shafts 3 and 4.

This auxiliary shaft X has a slotted top and bottom. A strong rigid heddle (made from a wire coat hanger wire) in the shape of a hook, (Fig. 3) slides up and down between the slots. This heddle holds the pattern warp end (or bundle) (Fig. 4). If the heddle is hooked on the shaft in back of it (shaft 3) the warp end will be threaded on 3 (Fig. 5). If the heddle is hooked on the shaft in front of it (shaft 4) the warp end will be threaded on 4. An extra lid or clamp is necessary on top of harness frame 3 and 4 to hold the hook in place during the shedding motion.

*Editor: This account of Richard Shultz' shaft-switching system is done from memory. The editor is responsible for any inaccuracy.*





Carol Havey

together and might wear out faster. Shaft-switching produces a reversible fabric in which the colors of the figures and ground are reversed from front to back. Photos 1 and 2 show the two sides of the hanging, "Arizona Sunset". It was woven in double shaft-switching at 5 epi and finished to hang with either side visible.

### THE DRAFT

A 3-end block draft was used with double shaft-switching.<sup>1,2,3</sup> In double shaft-switching, the switching may take place between more than one set of two shafts. In the 3-end draft shown in Fig. 1, block 1 becomes block 3 and vice-versa by shaft-switching between shafts 3 and 4. Block 2 becomes block 3 and vice-versa by shaft-switching between shafts 2 and 4.

The three blocks, 1, 2, and 3 differentiate themselves through their color: block 1 shows color L, block 2 shows colors D and L in vertical stripes, and block 3 shows color D. Note that the shaft nearest the weaver is number 4, which makes it easier to reach the shaft switchers. Remember this when doing the tie-up. Note that whenever block 1 occurs to the right of block 2, there will be a three-thread float, 1, 4, 1. This natural flaw in the weave structure adds an interesting three-dimensional effect to the design.

In the threading draft in Fig. 2, 2/4 and 3/4 each indicate one unthreaded end and two empty heddles beside the end. The last two ends of each selvedge are doubled and sleyed together to make a firm selvedge. Note that the end on shaft 1, that would have been at the right selvedge, has been moved to the left selvedge. If shuttles L and D are started on opposite sides and are thrown alternately, this threading will ensure that the selvedge weaves correctly without the need of floating selvedges.

In each repeat, thread the first end through a heddle on shaft 1. Push over a heddle on shaft 2 and one on shaft 4, then pull the second end through the shafts without thread-

1. "Arizona Sunset", light side. Andrea Green, 1982. 30" by 45".

## SHAFT-SWITCHING TO CREATE TAPESTRY EFFECTS

by Andrea Green

Shaft-switching is a loom-controlled technique which allows great freedom of design. It can create effects similar to tapestry-woven designs but it is much faster to weave. On the other hand, a *kilim* is a traditional Turkish flat-weave rug with slit-tapestry technique

and geometric shapes in a multitude of colors. Shaft-switching can produce a rug which is reminiscent of a kilim but offers several advantages. In addition to the greater weaving speed, the fabric is thicker, with a richer texture, and there are no slits which have to be sewn

ing through a heddle. Push over a heddle on shaft 3 and one on shaft 4, then pull through the next end without threading it through a heddle. The shaft-switching operation is easier if both empty heddles are to the right of the unthreaded end. Sley the reed, then slide a shaft-switcher on each unthreaded end before tying on (Fig. 3). Brass snap swivels, sizes 12 or 14, are available in fishing and sporting goods stores.<sup>2</sup> Cut off the swivel part with wire cutters and use needle-nose pliers or a hemostat to open and close the snap as you would a safety-pin.

Carol Havey

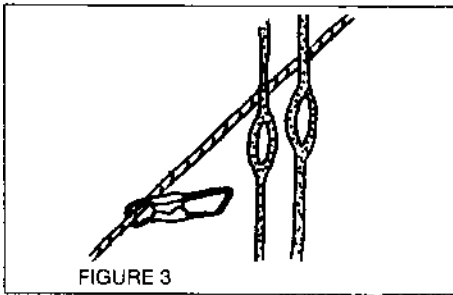


FIGURE 3

### WEAVING THE RUG

**Warp:** 6/3 linen rug warp (from Novitex).

**Sett:** 5 epi (15/10).

**Weft:**

Color D: wool rya yarns used two-fold (from Fort Crailo Yarns).

Color L: wool in the colors of the Arizona sunset, used threefold (Crailo-spun from Fort Crailo Yarns).

**Amount of weft used:** .5 lbs. per square foot of rug.

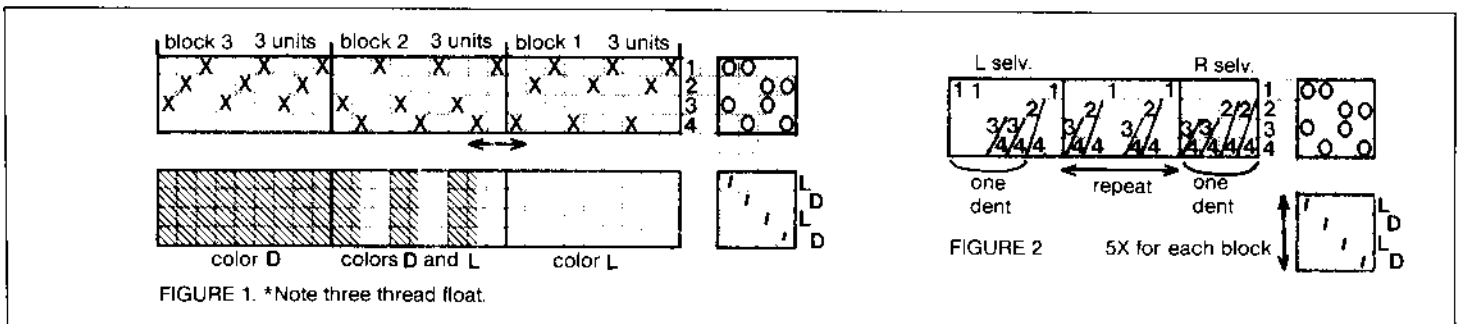
**Threading:** The threading is based on Fig. 2. The vertical border stripes are threaded (or switched) so that they are two repeats of the unit of block 2 on each side.



2. "Arizona Sunset", dark side.

The rest of the rug is woven in block 1 except where the diamonds are to be placed. Horizontal stripes are woven at the beginning and at the

end of the rug. Although stripes can be achieved by switching from block 1 to block 3 across the entire rug, a more economical way is to



reverse the throwing order of the two colors. If shuttle L is thrown first to produce a background in color L, then throw shuttle D first to produce a stripe in color D. If the #2 blocks are kept unchanged, a checkerboard pattern occurs at the intersections of the vertical and horizontal stripes.

Color D was the same throughout the rug. In "Arizona Sunset" the L color was "walked"; out of several strands wound together, one at a time was changed to a slightly different color so that the colors gradually melted into one another as the weaving progressed. After each switching operation, five treading repeats were woven before the next units were shaft-switched. Although shaft-switching designs are usually asymmetrical, the diamond in Fig. 4 and variations on it can be made to appear symmetrical by switching the blocks asymmetrically. For example, in row (b) there are three #2 units, but going into row (c) only the two blocks on the left are switched to #3 units. The #2 unit on the right remains the same. (each graph paper column of the design represents one

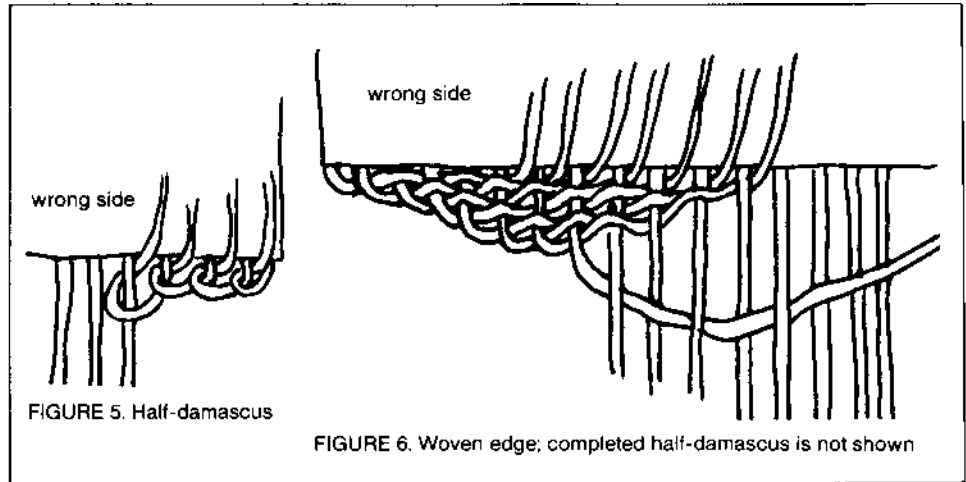


FIGURE 5. Half-damascus

FIGURE 6. Woven edge; completed half-damascus is not shown

3-end unit, each circled number in the threading draft represents an end which has been switched from the row before.)

### FINISHING

After cutting the rug from the loom, the ends were protected with a half-Damascus edge (Fig. 5). Working on the wrong side of the rug, make half-hitches from right to left. As you tighten each end, the first few weft shots will be pressed into the rug so that the weave at the end of the rug is no looser than in the body

of the rug. Then a woven edge was made from left to right across the rug.<sup>4</sup> (Fig. 6). Working on the wrong side of the rug, each warp end is woven under and over three or more of its neighboring ends, and then turned to the back of the rug. Use a crochet hook to weave through the shed, catch the weaving end and pull it through the shed. Curve the end through the shed to allow for take-up, then press it firmly towards the rug to tighten. The more ends that each end is woven through, the wider the edge will be.

The last four ends are braided in a four strand braid for an inch or more, then tied in a hard over-hand knot. Saturate the ends where they emerge from the woven edge with a fabric glue. After drying overnight, the ends can be cut off about 1/8 inch long. The overhand knots of the four-strand braids may be soaked in glue before tightening. This finish is reversible although the "right" side will look a little better than the "wrong" side.

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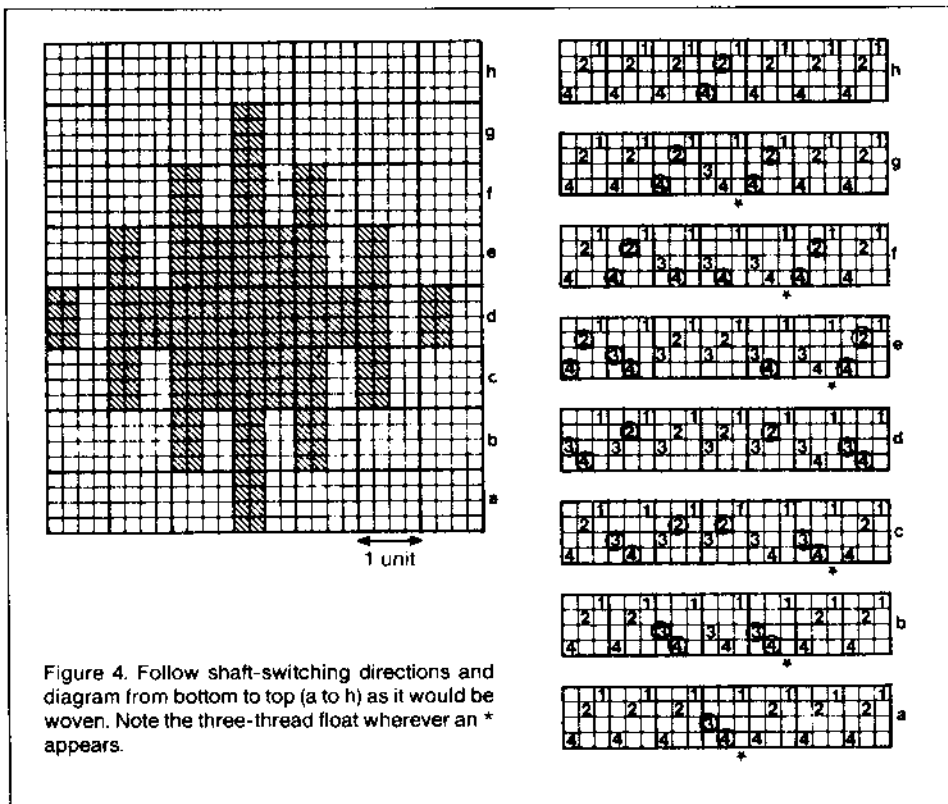


Figure 4. Follow shaft-switching directions and diagram from bottom to top (a to h) as it would be woven. Note the three-thread float wherever an \* appears.



## MULTI-COLOR, ONE-POT DYEING

by Susan Henrikson

Multi-color dye techniques, done in a single pot, lend themselves to many fiber projects. The upholstery fabric on the chair pictured is just one example.

For several years home dyers have been experimenting with dyeing procedures that give random, yet pleasing, multiple colors to their fibers—be they in the fleece, yarn or finished fabric form. The article "Rainbow Dyeing" by Erica Rowe, published in *The Weaver's Journal*, Fall 1983, gave a good overall view of the one-pot multi-color approach. This method uses a relatively small amount of water in the dyepot. The fiber is simmered gently and not stirred. Several years ago *Shuttle Spindle and Dyepot* published an article on microwave dyeing—a similar, yet different means to the

same end. Others are doing more and more sophisticated dip dyeing, a method where different parts of the fiber are dipped into different dye pots and then overdyed where blends are desired.

My own experimentation in the field has been with dyeing pre-made warps. I began by using a technique similar to that described in the article by Rowe. My most recent dyeing has been done using steam to set the dyes. The system has given me somewhat less random although not totally predictable results. Often the effect is similar to ikat, though more organic.

The steaming process cuts down the diffusion of the dyes even more than the gentle simmer, non-stir technique.

The number of different colors one wishes to use may vary considerably. I've used as few as two and as many as eight, depending upon the effect I've been after. It's safe to stay with monochromatic colors, but the results may be more exciting if colors from different parts of the color wheel are used. There will be more richness in the blends if contrasting colors are used. This is a good hands-on way of learning how colors blend and how they affect one another.

A narrow warp project such as a neck scarf, lends itself well to a first experiment. The narrow warp is easy to handle, one has more control and can see the results of the dye distribution readily.

The warp is made and then tied loosely with figure-eight ties hold-

ing bunches of one to two inches of warp ends (Fig. 1). The ties are repeated every 18 to 36 inches—depending upon the preciseness one desires. The ties are used so that the warp may be laid flat and kept in order during the dyeing. If a wide warp is to be dyed, each warp section is laid side by side and the figure-eight ties are joined. Even with careful tying there will be some slipping, but, because of the nature of the dyeing process, one should not expect precise results anyway.

After the warp is made, tied and chained, it is scoured in preparation for dyeing.

Next, sprinkle the dye on the warp. For a narrow warp a large tub is not necessary, but for most warps a large low container (such as a baby bathtub) is needed.

Unchain the yarn and, beginning with the cross, lay the damp warp as flat as possible the length of the container and sprinkle the dyes directly onto the yarn. The different dye colors need not meet as they will diffuse somewhat in the steam process. The color will be much less intense, of course, where white spaces are left.

After the dye is applied to the first section of warp the next length is laid over the first and the process is repeated. Continue until all of the yarn is in place in the container and all the dye is dispersed. My experience has been that the results are best if two to three times the normal amount of dye is used.

When all the dye has been applied, carefully transfer the yarn to the largest enamel or stainless steel steamer available. Lacking a

steamer, a screen (stainless steel or wooden) placed in the bottom of a large dye pot will do. Ideally there should be one and one-half to two inches between the yarn and the bottom of the pan. The water should be at least one and one-half inch deep. Be prepared that dyes on the yarn that come in contact with water will diffuse more and give a different effect.

Cover the pot tightly and allow it to steam for one and one-half to two hours, adding more water if necessary. Allow yarns to cool in the covered dyepot. As the dyes are usually not exhausted, I use the first couple of rinse waters to form the base for the dye for the weft yarn. If more dye needs to be added for the weft yarn, the same dye colors used in the warp will blend to form a harmonizing color for dyeing the weft yarn.

The upholstery cushions pictured were commissioned by a client who wished to incorporate the feeling of the out-of-doors in her home. The fabric was designed to loosely represent through color and mood the moss rock outcroppings seen from the client's living room.

Eight different colors were used. Most of the colors were monochromatic: orange through rust and maroon, with contrasts of green (to represent the lichen) and a deep gray-brown. There were seven chairs in all. Each chair was to be different but was to harmonize with the others. Thus the distribution and proportions of the dye colors could vary from chair to chair. This was essential, for 30 yards of 27 inch warp would not fit into one dye pot. Three different dye lots were used. The yarn for the

weft for the entire commission was dyed at one time to assure continuity. By using the leftover dye bath and adding more of the colors used in the warp, plus some black, the weft color was harmonious, yet dark enough to recede and allow the pattern of the warp to dominate.

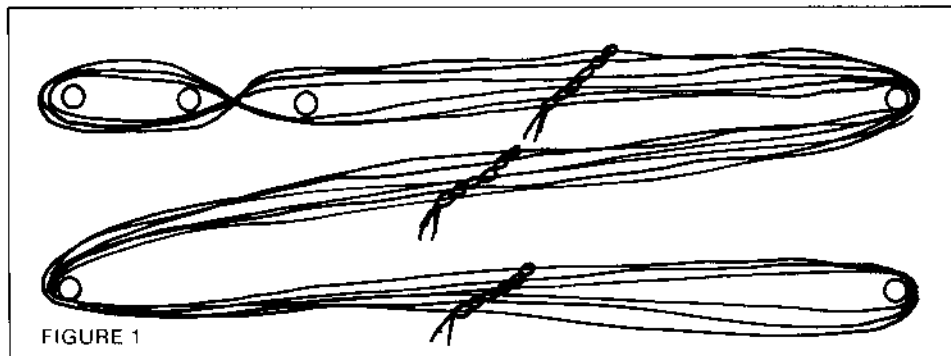
I've used this method to dye animal fibers (wool and silk). Union dyes such as *Cushing Dyes* are definitely the easiest to use as they come in many premixed colors. Their drawback is two-fold. They are relatively expensive and they are not generally as color fast as the acid dyes from such companies as *Ciba*. The acid dyes may be premixed in their powdered form but this requires careful measuring and color knowledge to get the desired colors. Mixing acid dyes that are in stock solution is more accurate.

I've done some experimenting using acid dyes in liquid form. The effect is different but can be quite good. Spray bottles containing different stock solutions and sprayed at close range give control to the sprinkling.

As with all home dyeing, it is important to observe safety precautions. Dye pots and other dye equipment should only be used for dyeing—not food cooking. Don't mix eating with dyeing—the two should be kept totally separate. Cover all surfaces and wipe up all spilled dyes as soon as possible. Use rubber gloves and a mask whenever working with dyes. If using dyes in their powdered form, be especially careful to keep your nose and mouth covered so as not to inhale the powder. Use adequate ventilation.

The more I play with this dye technique, the more excited I become over the possibilities of the controlled spontaneity.

*ABOUT THE AUTHOR: Susan Henrikson lives in the mountains above Boulder, CO. She recently co-authored The Dyers Book with Carol Kampert. Her current interests are the dyeing and weaving of creative clothing.*





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# ANATOMY OF A QUILTED COUNTERPANE

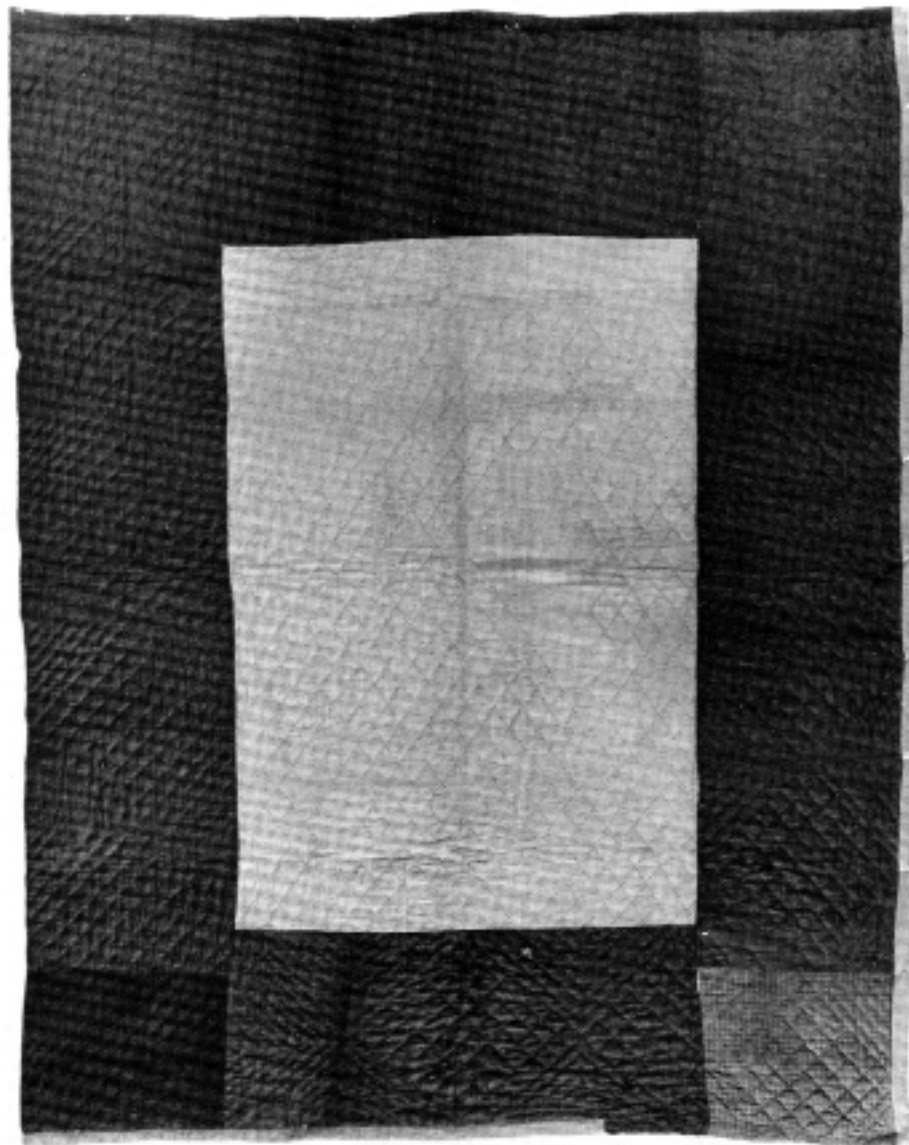
by Rita J. Adrosko

A somewhat worn-looking, patched quilted counterpane (Photo 1, Fig. 1) was acquired for the Smithsonian Institution's Division of Textiles collection in 1969. It was interesting because of the variety of cloths that make it up and because, as first suspected, analysis of its materials and construction revealed that it had been assembled and quilted during the eighteenth century.

Since almost all the fabrics that made up the bed cover showed evidence of varying degrees of wear before being incorporated into this piece, all could safely be assigned a date even earlier in the eighteenth century than that of the counterpane itself. One question that could not be answered was how long it would have taken for the various elements to become as worn as they were when worked into this counterpane.

This is a step-by-step record of the partial dismantling of the quilted counterpane and the analysis of its components. It is hoped that this account of our experience will point up the usefulness of the careful observation and technical analysis of antique textiles in learning as much as possible about them when documentary information about their history and use is not available. Perhaps the most important result of this study was the uncovering of almost a dozen utilitarian types of fabrics that could have been made in the United States during the eighteenth century.

Dismantling a textile for study is certainly not recommended as a normal procedure, for in most cases such treatment will destroy the textile's worth as a historical docu-



1. Bedcover face

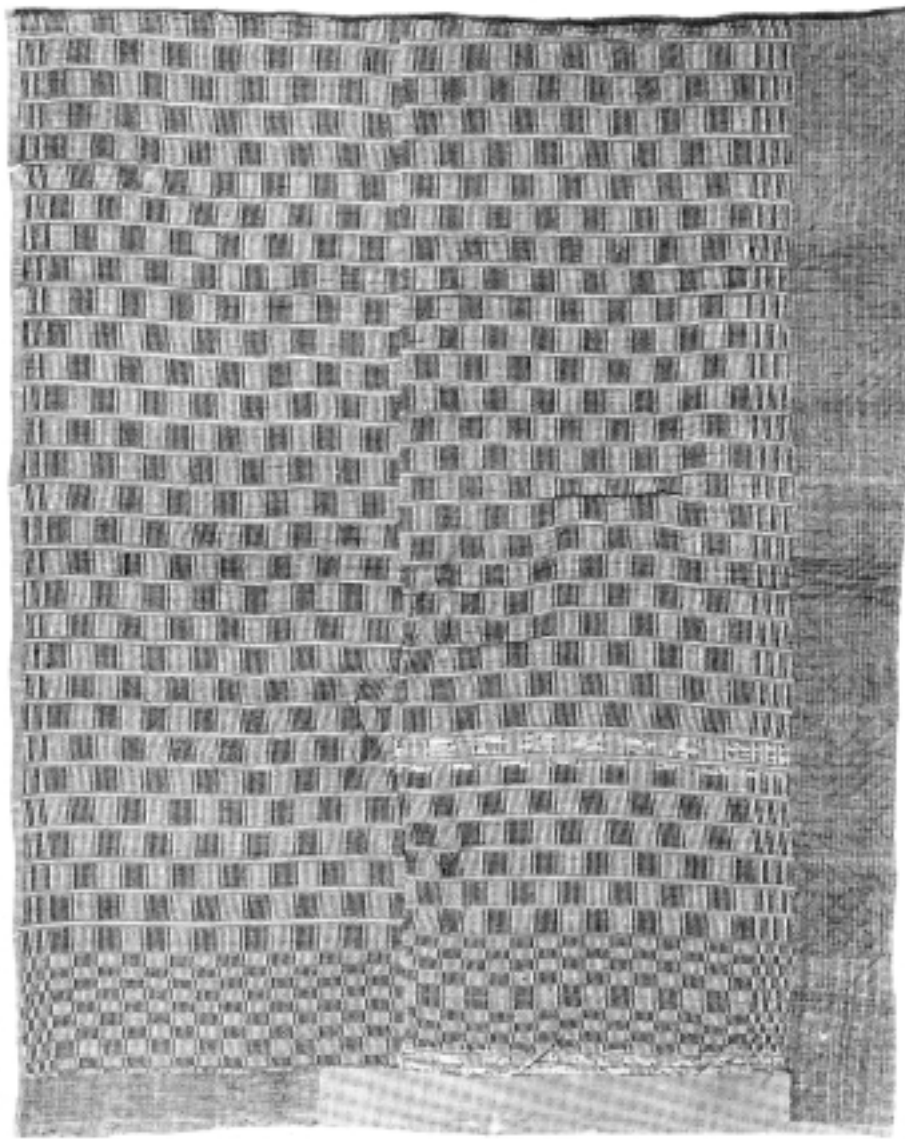
ment. After careful consideration of this particular case, however, it was determined that the individual parts were more valuable separated than in their assembled state.

The bedcover's face has a dull medium yellow-green unglazed wool center and sixteen-inch deep glazed indigo wool borders; squares of different checked wools filled in two of the corners. Two other fabrics, a khaki-colored cotton twill and a deteriorated brownish black wool were used as binding strips along the edges.

A coverlet served as the major portion of the lining. Because the coverlet was not quite large enough to cover the entire lining, two different striped linsey-woolseys filled out two of its edges (Photo 2, Fig. 2).

The black wool strip along the counterpane's upper edge and most of both sides were added much earlier than the modern fabric (not described here) that was sewn along the bottom edge. The date of the black strip, as well as of some of the other parts of the stitching, is suggested by their sewing thread. Its being S-twist two-ply linen did not make it impossible for the piece to have been made more recently; however, such thread in a somewhat deteriorated state at least opened up the possibility of its predating the period when cotton sewing thread became available.

This bedcover as well as its individual components had certainly endured hard wear, for there was evidence of repairs made at differ-



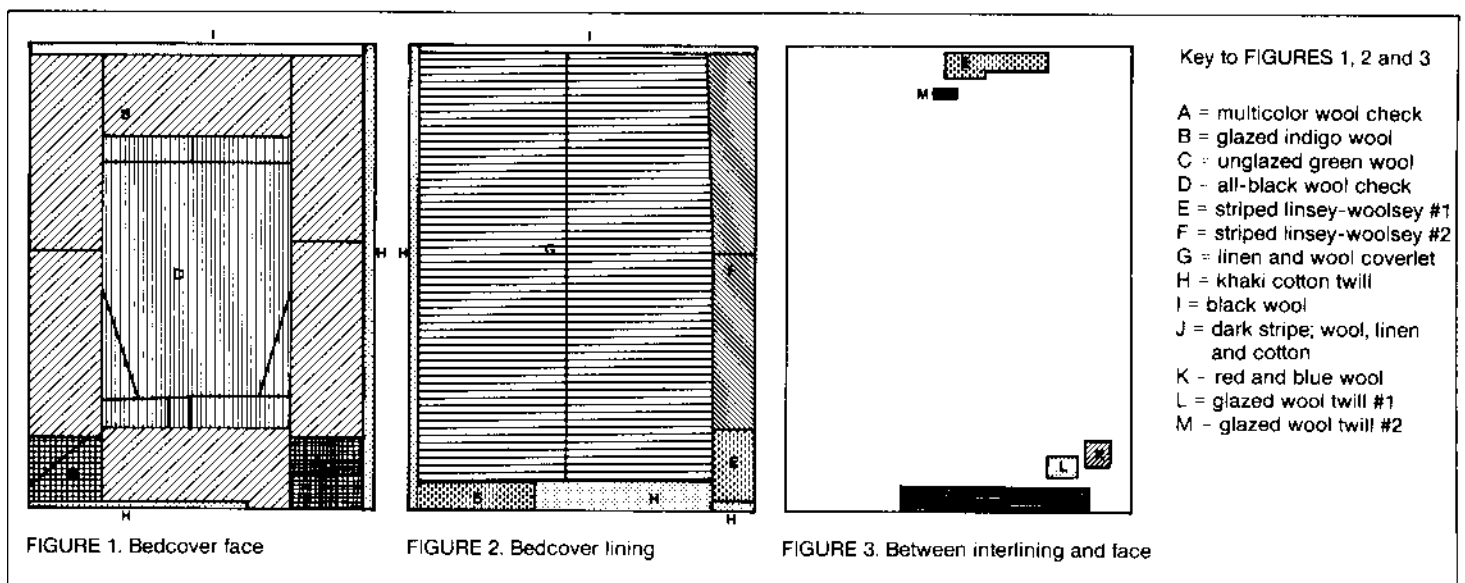
2. Bedcover lining

All photos courtesy of the Smithsonian Institute, Washington, D.C.

ent times on most of its parts, as well as on the counterpane itself. Apparently the edge that now served as the bottom (the edge with the two contrasting fabric corners) had been in such bad condition at one point that the worn edge had been cut off and roughly turned under, and khaki cotton twill binding applied. It is quite possible that at an earlier stage of the counterpane's use this bottom edge had been used at the foot of the bed. This is suggested by the presence of the corner squares, that now fill in cut-out corner squares that once could have hung down on either side of bed posts at the foot of the bed.

The most worn side of the linsey-woolsey parts of the lining had been stitched down toward the interlining. Even before they had been sewn into the counterpane, they had been mended crudely with two-ply S-twist natural linen thread. In fact all fabrics, except the green and indigo wool face fabrics and the glazed wool twill found buried inside, had had hard wear before they were incorporated into the bed cover.

When the different sections were assembled, the stitching was crude and bunched-up in some places, although the final quilting stitches were neat, and of fair quality. One corner had been quilted especially tightly, suggesting a different



hand from that which worked most of the remainder of the counterpane. The border quilting pattern was a more elaborate diamond design than the center's simple diamond repeat. It might have been done at a different time from the plain diamond quilting in the center.

It is made in weft-faced plain weave, with the warp completely hidden by the wool weft. Groups of six natural linen warp yarns woven as one alternate with singles linen warp ends to form the basic pattern block. The border is formed in the same way, incorporating a different number of warp ends in each group to form the border blocks.

Its pattern is a checkerboard repeat about five inches long and four inches wide, consisting of 2¼ inch wide blocks, with an inch-high horizontal band made up of stripes of blue/yellowish-tan/blue separating each row of blocks. Alternately woven yellow-tan and dark brown weft yarns create the block and stripe pattern. Switching color blocks is achieved simply by weaving two shots of the same color weft, then continuing to alternate brown and yellow-tan shots in the new order. In this way the predominating weft is reversed; the same principal as that used in forming log cabin blocks is in operation here.

We emerged from our study of the quilted counterpane's, and the coverlet's, materials and composition with an exciting conclusion. This coverlet was quite likely the oldest one in the Smithsonian's collection, whose earliest coverlet until then was an overshoot coverlet with the woven date "1784." This coverlet might also be the earliest one identified until the present in any other collection of American coverlets (Winterthur's collection includes an overshoot coverlet with "1773" woven into one corner).

In trying to determine by whom and where it might have been made we searched our own and other coverlet collections for similar

pieces with a known provenance. The only other whole coverlet made in the same technique found in the Smithsonian's collection is one that had been used by the Copp family of Stonington, Connecticut around 1800. Our guess had been that a weaver with an English background made the Copp coverlet, since most of Stonington's population around the turn of the eighteenth century was of English descent or origin. Efforts to find an English counterpart of this coverlet were unsuccessful.

A layer of white carded wool formed the center section of the interlining and natural dark brown carded wool filled in its borders. The presence of carded wool as a quilt's interlining usually indicates that it was made before commercially carded cotton became available early in the nineteenth century. During the latter period American-grown and ginned, carded cotton fiber took over as a replacement for wool, probably because cotton was easier to launder, less expensive and perhaps lighter weight.

Four of the five fabric patches found hidden between the interlining and outer fabrics did not duplicate those on its face or lining. Fig. 3 shows the various layers of fabric revealed when the checked wool on the lower right corner of the counterpane was peeled back. In this original arrangement a glazed wool twill and a red and blue wool fragment are seen resting against the dark carded wool of the interlining.

Before dismantling, this comparatively small counterpane (86" long x 67½" wide) (221 cm x 171.5 cm) weighed eleven pounds. Five and one-half pounds of this weight was in the coverlet that made up most of the lining.

In the dismantling process the lining was carefully snipped away from the counterpane's interlining, leaving intact the interlining and face fabrics, along with the remains of the still-attached quilting stitches. It was felt that the quilted

face, still joined to the interlining, could be remounted on another backing if it ever became necessary to exhibit the face side of this bedcover. Only the corner squares and the fabrics that lay directly under had been permanently removed from the face. If necessary they could be replaced with suitable eighteenth-century-type fabrics.

## The Coverlet

Before the relatively small coverlet was separated from the counterpane, it appeared that it might be just a part of a once-larger bedcover. Fortunately it turned out to be a whole coverlet, made up of two 86 inch lengths, each 29¾ inches wide, sewn together with two-ply, S-twist linen thread. Both the top and bottom edges are finished with inch-wide red herringbone twill worsted tape. The top binding tape was stitched to the coverlet with red wool yarn. The coverlet's overall dimensions are 86 x 59½ inches, and it shows no evidence of ever having fringe.

The Burnhams wrote about such coverlets in *Keep Me Warm One Night* (Toronto: Royal Ontario Museum: 1972, pp. 147, 182-3), concluding that they are among the earliest found in Canada. The Canadian versions appear to have been woven by Alsatian Mennonites who may have brought knowledge of weaving them from Europe. Figure 234 in the Burnham's book is a coverlet that especially resembles ours.

The presence of bright red bindings along the top and bottom edges of a yellow-tan, brown and blue coverlet was puzzling: this color combination seemed a bit garish judging by the use of color in other early coverlets. Although the color of the yellow-tan parts was even and appeared only slightly more orange on the side hidden from view, it was thought that perhaps what was now yellow-tan had faded to that hue from an original orange-red (madder) color; that would have justified the use of the red trim.

It was slightly disappointing that analysis of the dye materials did not confirm our hypothesis. Max Saltzman, a dye chemist who has examined many early dyed textiles, and who had the yellow wool coloring material analyzed, informed us that it was quercitrin, a component of quercitron, a yellow dyestuff derived from the bark of the black oak tree. This excellent dyestuff was commonly used in America until the mid-nineteenth century. While this report did not prove what we hoped it would, it added to the circumstantial evidence that the counterpane and its coverlet were, indeed, made in America.

### The Other Fabrics

The two other main categories of fabrics found in the counterpane are linsey-woolseys and common all-wool cloths in types that would have been used primarily for clothing. Because we believe that this bedcover predates the use of the power loom, all of these fabrics would have been hand woven. There is, however, no sure way to distinguish imported from locally made fabrics or professional weaver's work from that of non-professionals, except possibly by guesses based on fineness of weave and finish and knowledge of the fabrics usually imported.

The linsey-woolsey group includes two "true" linsey-woolseys (E and F), those having a linen warp and wool weft. Each has a different arrangement of blue and brown weft stripes, and of warp bands in natural and light blue. The brown warp of the third fragment (J) in this group is also linen, but its striped weft is made up of dark green wool and black and brown cotton. Its overall dark color, plus the unusual use of cotton make it quite different from other fabrics of this genre. Cotton yarn was certainly used at the time, but the processing of domestic cotton before the introduction of Whitney's cotton gin was very slow. Also, the cot-



3. Coverlet detail

ton imported from Britain, which came from India, was spun either in Britain or in India, and would have been more expensive than using wool alone for the weft. Finding cotton dyed in dark colors in this utilitarian sort of fabric was even more surprising.

Seven of the eight all-wool fabrics are solid colored; all except two are fairly coarsely set plain weaves, with the other relatively fine  $\frac{2}{2}$  twills. The thread count of most of the plain weave pieces averages 29

x 26, while the pair of twills average 51 x 43 threads per inch. The latter finely polished fragments may be the work of professionals.

All except two fabrics in the group are piece-dyed in rather dull colors: one indigo, a dull yellow-green and two black; both twills are greenish brown. The exceptions are the purple cloth having solid red in one direction and indigo in the other, and the log cabin threaded small-scale check in red, light greenish blue and dark indigo.

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## FABRICS IN THE QUILTED COUNTERPANE

	Weave	Yarns	Dye Method
A. Multicolor wool check	plain	W & F: red, lt indigo & dk indigo	yarn piece
B. Glazed indigo wool	"	W & F dk indigo	"
C. Green unglazed wool	"	W & F dull yellow-green	"
D. All-black checked wool	"	W & F black	"
E. Striped linsey-woolsey #1	"	W: white & lt blue linen F: med & dk indigo & brown wool	yarn
F. Striped linsey-woolsey #2	"	W: white & lt blue linen F: lt & dk indigo & brown wool	"
G. Coverlet	"	W: natural linen F: brown, yellow-tan & med blue wool	"
H. Khaki cotton twill	twill	W & F: khaki cotton	piece
I. Black wool	plain	W & F: black wool	"
J. Dark striped cloth	"	W: brown linen F: dk green wool; black & brown cotton	yarn
K. Red & blue wool	"	W & F: red & blue wool	"
L. Glazed wool twill #1	twill	W & F: greenish brown worsted	piece
M. Glazed wool twill #2	"	W & F: greenish brown worsted	"

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Probably the most interesting fragment of these is one of the two all-black pieces (D). On first glance it appeared to be just another rather worn and tired-looking black cloth. Closer inspection revealed that it had a subtle, almost imperceptible checked pattern. Further examination showed that it was produced by alternating eight S-twist with eight Z-twist yarns in both the warp and weft. Although unlike damask in structure, it resembles damask in its dependence on the difference in its reflection of light to bring out the pattern. In this case the reflection of light on the groups of S- and Z-twist yarns is different enough to show up the fabric's checked pattern.

J. P. Wild in *Textile Manufacture in the Northern Roman Provinces* (Cambridge: Cambridge University Press; 1970, p. 54) described a similar fabric made in early times:

Check effects achieved by alternating S- with Z- spun yarns without a color change are common among prehistoric finds, but are as yet without parallel in the Roman provinces.

How such a fabric made its way into a quilted counterpane in eighteenth-century America would no doubt make an interesting story, if it were ever possible to track it down.

The project had a very happy ending: besides providing the Division of Textiles' collection with what is probably its earliest coverlet, this counterpane added to it a selection of ordinary citizens' garment fabrics of the type that normally would not have been preserved as garments, and certainly not as textiles.

*ABOUT THE AUTHOR:* Rita Adrosko is the Curator of Textiles at the Smithsonian Institute in Washington, D.C.



## A SAFE DYE FOR CHILDREN by Marilyn Gilsdorf

Color was the theme of our guild's meetings for the months of October and November. Being a spinner and weaver but not much of a dyer, I decided this was the perfect time to try a new dye. I did and the colors I got are so vibrant—actually shocking; the method so easy, the cost very inexpensive, the dye accessible to everyone—everywhere. So I began—I used handfuls of washed fleece and dyed the wool in a green enamelware kettle. After I had tried all the available colors, I tried dyeing a 3/12 worsted wool (Nehalem from Oregon Worsted Co.) for warp. Wow! What color! Then I carded some of the dyed wool fleece and spun it into a variegated yarn and wrapped it on a card. I put the bright fluffs of wool into a beautiful basket, dropped the Nehalem skeins over the handle and set off for the guild meeting. At the meeting I set a card on top of the wool asking the members if they

would identify the dye. Such comments!

During "show and tell" I again asked who could identify the dye... no one. I whipped out several empty packages of Kool-Aid! What a success my basket of color was. My phone has been ringing off the hook with people having fun with the Kool-Aid dyes. The possibilities are unlimited. The colors can be blended, top dyed, etc.

Probably the most important aspect is that it is safe to use around children so is excellent for demonstrations.

The actual method I used for dyeing the wool is as follows:

1. Wet the wool.
2. Add two packages of sugarless Kool-Aid to kettle of cold water.
3. Stir.
4. Add wool.
5. Turn stove to low.
6. When wisps of steam appear,

turn to simmer and set the timer for 30 minutes.

7. At the end of 30 minutes, turn the stove off but leave the wool in the kettle to slowly return to room temperature.
8. The wool was then rinsed, with no loss of color, washed in Woollite and rinsed and again no loss of color.

With the exception of grape Kool-Aid, all the colors exhaust the dye bath. Absolutely fascinating for children of all ages.

I think I better explain where the aqua color comes from. In grocery stores I have found two different colored packages of lemon-lime. One package makes the bright green, the other, the aqua.

*Editor's note: Here at *The Weaver's Journal* we have tested the dyed swatches which Marilyn Gilsdorf mailed to us by exposing half of the swatches to the sun for a period of more than a month. The results are remarkable: no visible fading took place.* ■



1. Tarascan lace scarf by Micheline Thabet: 20/2 cotton, 24 epi, 9" wide, 220 ends

## TARASCAN LACE

### by Micheline Thabet

Tarascan Lace, a gauze weave, is still being woven today by the Tarascan Indians living in the Michoacan region of Mexico.

The lace is composed of two parts: the background and the pattern. The background is a complex al-

ternating leno structure. It takes four wefts to complete the structure. The pattern is a simple alternating leno structure.

The loom is set up for plain weave. The warp threads are in multiples of four. A flat shuttle for the weft and a pick-up stick are needed.

#### BASIC PROCEDURES

When shed **one** is open, the *first right* thread is *up*. The pick up is always done on shed **one** and the weft passes from the right to the left (crossing row).

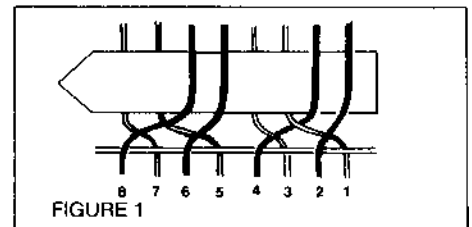
When shed **two** is open, the *first right* thread is *down*. There is no pick up on that row. The weft travels from left to right (plain weave row).

#### BACKGROUND

Repetition of the following four rows will produce the background.

**Row 1:** With shed **one** open and starting at the right, push the upper warp threads slightly to the left with the left fingers. With the stick, pick up the first two bottom threads (2 and 4) and drop the first two upper ones (1 and 3). Pick up the next two bottom ones (6 and 8) and drop the next two upper threads (5 and 7) (Fig. 1). Continue picking up two and dropping two through the row (this is a *2/2 crossing*). The *2/2 crossing* could be numerically expressed as follows:

$$2/2, 2/2, \dots 2/2, 2/2.$$

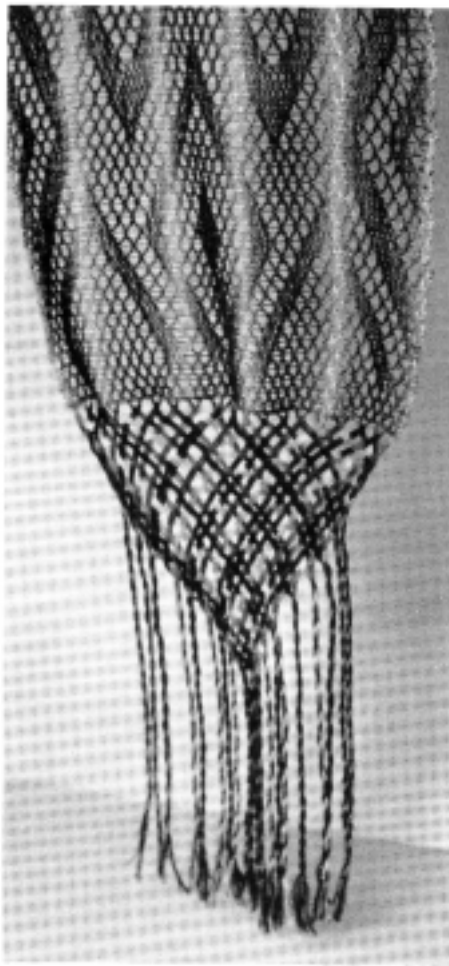


The stick is now holding the crosses. Turn it on edge to open a shed. Throw the weft from the right to the left. Before removing the stick, use it to push down the weft. Remove the stick and beat.

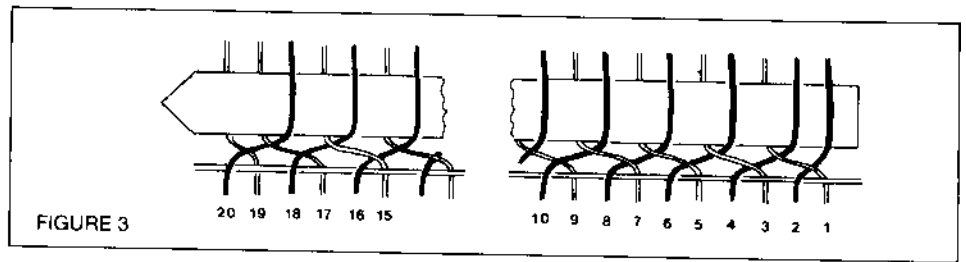
**Row 2:** With shed **two** open, pass weft from left to right. This is a plain weave pick.

**Row 3:** With shed **one** open, pick up the first right bottom thread (2) and drop the first upper thread (1). Pick up the next two bottom ones (4 and 6) and drop the next two upper ones (3 and 5) (Fig. 2). Continue picking up two and dropping two to the last two warp threads. Pick up the last bottom thread and drop the





2. Tarascan lace Scarf by Micheline Thabet



To make a simple alternating gauze weave, starting at the right on shed **one**, pick up the first two bottom threads (2 and 4) and drop the first upper thread (1). Pick up the next bottom one (6) and drop the next upper one (3). Continue picking up one and dropping one to the end of the pattern (*1/1 crossing*), ending by picking up one thread and dropping two (Fig. 3). On a numerical diagram it would look as follows:

1/2, 1/1, 1/1, . . . 1/1, 1/1, 2/1

**DESIGN GRID**

In Tarascan lace, the crossings could be represented as:

- 2/2: pick up 2 drop 2
- 2/1: pick up 2 drop 1
- 1/1: pick up 1 drop 1
- 1/2: pick up 1 drop 2

It is much easier to design or read a pattern if a grid is used (inspired by Margaret Newman's publications on Tarascan Lace).

Each "2" in the grid, represents four warp threads and corresponds to a *2/2 crossing* (Fig. 4). It is the background. To design a pattern the lines are drawn diagonally or horizontally on the "2"s (Fig. 5). Inside those lines, there is always an odd number of *1/1 crossings*.

The "2"s covered by the lines are the link between the background and the pattern. Each pick-up row is followed by a plain weave row. The plain weave row is not shown on the grid. The reading of Figs. 4, 5, 6 and 7 should be from right to left (reverse for left-handed people) and from bottom to top.

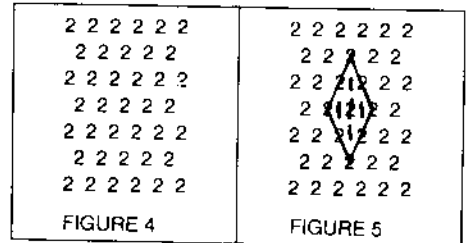
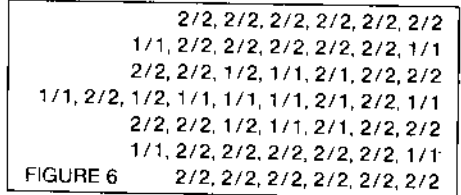


Fig. 6 is the numerical reading of Fig. 5. Fig. 7 represents the weave draft of Fig. 5.



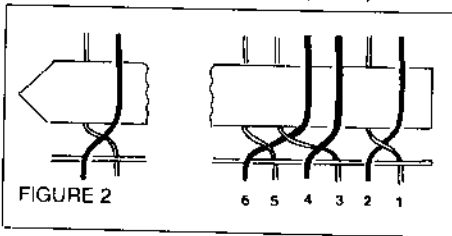
**WEAVING**

It is important to release the tension of the loom slightly while weaving the lace.

Since the draw-in is large and the edges are difficult to control, the use of a stretcher is recommended.

last upper thread. Numerically it would look as follows:

1/1, 2/2, 2/2, . . . 2/2, 2/2, 1/1



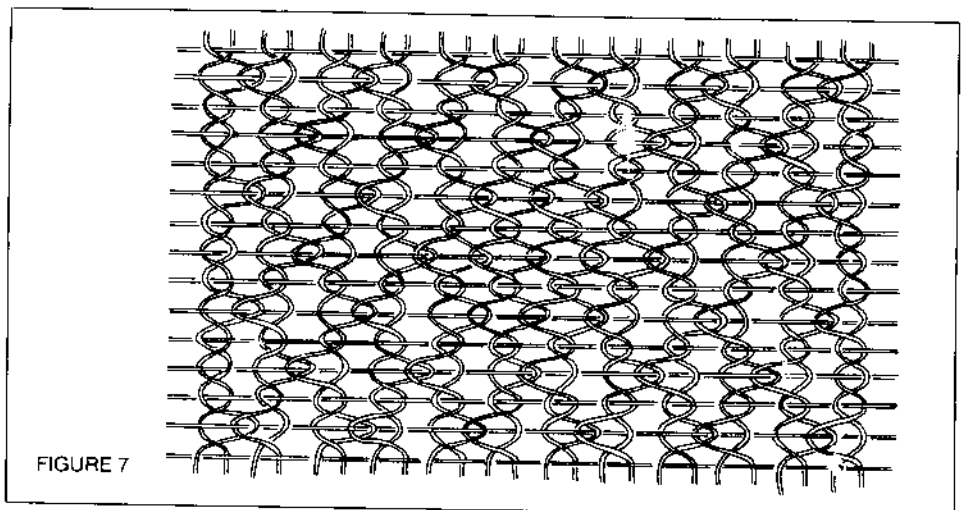
Pass the weft from right to left.

**Row 4:** Same as row 2.

**PATTERN**

The link between the background and the pattern is done

- a. by picking up *two* bottom warp threads and dropping *one* upper warp thread to the *right* of the pattern, e.g. picking up 2 and 4 and dropping 1 (Fig. 3) (*2/1 crossing*).
- b. by picking up *one* bottom warp thread and dropping *two* upper warp threads to the *left* of the pattern, e.g. pick up 20 and drop 17 and 19 (Fig. 3) (*1/2 crossing*).



**PROJECT—SCARF**

**Warp and weft:** 8/2 cotton

**Sett:** 16 epi

**Width in the reed:** 4.5"

**Total number of ends:** 12

**Length of warp:** 2 yards

**Weaving:** Start and end the scarf with two rows of plain weave. Follow the pattern on the grid (Fig. 8). The lozenge can be repeated as many times as desired.

After becoming familiar with the structures of the lace, it will be interesting to make a grid on a 8½" x 11" sheet, to design patterns and weave them to see the results.

**ABOUT THE AUTHOR** Micheline Thabet, a weaver from Quebec, Canada, has done extensive research in braided and woven bands. Her experimentations with ancient and ethnic techniques have led her to develop various innovative methods for producing bands. She gives workshops, teaching braiding techniques. Micheline is also fascinated with all types of loom laces and will continue to develop this interest which always brings new discoveries.



3. Tarascan lace scarf by Micheline Thabet; 8/2 cotton

Marlene Heim

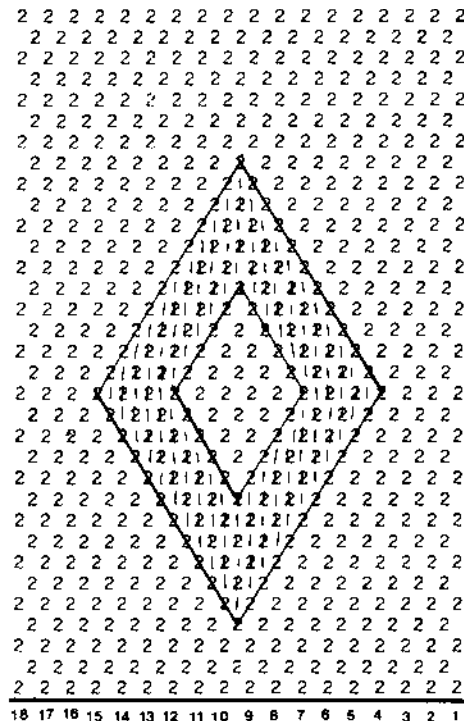


FIGURE 8

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- Emery, Irene. *The Primary Structures of Fabrics*, The Textile Museum, Washington, D.C.
- Newman, Margaret, *Tarascan Lace*, 1957. *The Weaver's Journal* Vol II #3 January 1978.

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# THE MASTERWEAVER LOOM: A NEW CONCEPT IN HAND-WEAVING

by Dr. M. M. El-Homossani

## BACKGROUND

The MasterWeaver Loom is a Canadian invention,<sup>1</sup> patented in Canada and in the U.S.A. and many other parts of the world. The loom offers an unconventional approach which replaces the necessary raising and lowering action of the warp threads (shed formation) accomplished by the harness-treadle system of standard hand-weaving looms.

As often is the case, a remarkable woman was behind this invention; the inventor's wife. The inventor—a renowned scholar and professor in the field of medieval philosophy—was motivated by the need of his wife to carry on weaving as a form of therapy for severe arthritis in her hands. His search was for a simple, yet versatile means to overcome the difficulties which his wife encountered in preparing and operating a conventional loom. This resulted in the development of a pattern design cylinder having a series of thread-separator discs capable of controlling the movement of the warp threads individually, and enabled relatively complex patterns to be achieved on a simple form of loom. The patent rights were sold to the present owners, MasterWeaver (1982) Ltd.,<sup>2</sup> a company wholly owned and operated by Canadians.

The story behind this achievement may deserve to be told in a separate human-interest feature, but this article is aimed at introducing and discussing the technique and design methods of this revolutionary new loom.

## SHED FORMATION BY MEANS OF A PATTERN DESIGN CYLINDER

The search for a simple, manipulative and versatile device to raise

and/or lower certain threads in a pre-selected consecutive order continues to be a challenge for weaving designers. Weaving technology has, of course, succeeded in achieving precise control of the warp threads, either in groups or individually, but this involves complex mechanisms and requires lengthy training and a high degree of skill. A competent designer requires an in-depth knowledge of the interdependence of the weave structure and the draft and the lifting plan. This knowledge is very valuable in helping a designer overcome the severe mechanical limitations of the traditional weaving loom.

In hand weaving, the harness-treadle system is the most commonly used technique to accomplish the weaving process. The mechanism is simple and capable of producing most of the basic weaves and their derivatives. It is possible to incorporate 12 or more shafts, and as many as 12 treadles is considered practically acceptable. This, together with the use of fancy drafting, and selecting yarns with particular characteristics, is sufficient to provide a variety of textures for the weaver.

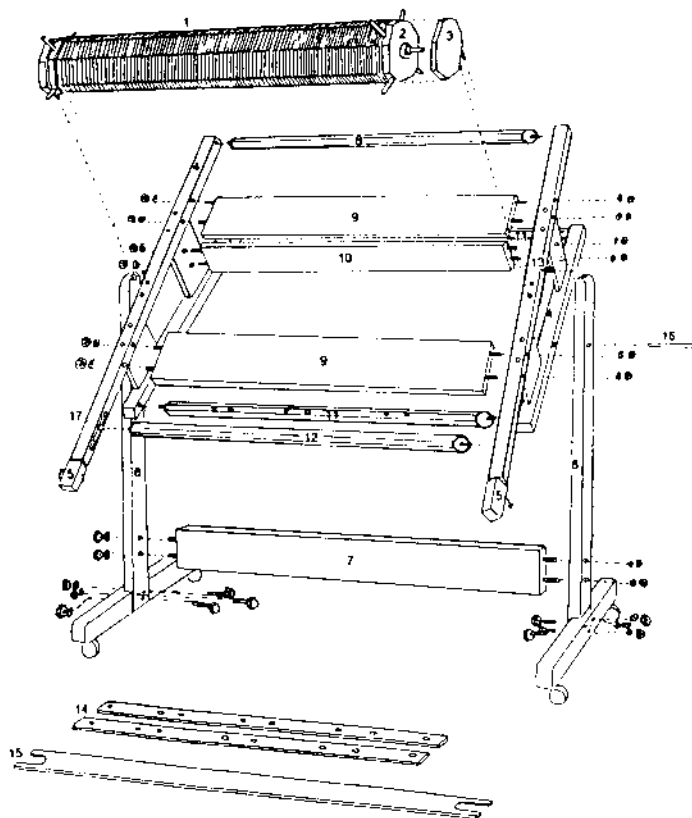
The main disadvantage associated with the treadle method, apart from its restricted patterning possibilities, is that it is necessary to alter the treadletying, or rearrange them, when the weave has to be changed. Moreover, if the new weave repeats on a different number of picks, it will also be necessary either to add or eliminate certain numbers of treadles. The cumbersome work involved in changing the weave made some weavers shift to dobbies to facilitate weave changes, even though the desired design is within the capability of the treadle technique.

Dobbies are initially more complicated and much more expensive than treadles, but they are versatile and usually control sixteen and sometimes as many as thirty-six heddle frames. Since the lifting of the frames is controlled by some form of pattern chain, there is virtually no limit to the number of picks per repeat.

For woven designs which are composed of freely drawn patterns, it is necessary for each warp end to be individually controlled. The Jacquard machine and its associated harness provided the required mechanism to achieve individual control of the ends in the design repeat. For hand-weaving purposes, the Jacquard machine is usually available in a variety of sizes to control from 100 to 600 ends per repeat. However, this capacity may reach 2000 or more ends per repeat for machines which are intended for the production of large repeats, involve high density setts on automatic weaving looms. Needless to say, high skills and profound technical experience are required to master the unlimited patterning possibilities offered by the Jacquard machine.

The entirely different concept of the rotating cylinder of the MasterWeaver loom offers a new and simplified technique to form an interwoven structure. This novel device fills the gap between the treadle system and the dobbie, and there is every possibility that it will overcome a number of the difficulties and drawbacks associated with conventional looms.

The loom is shown schematically in Fig. 1. As can be seen, the harness-treadle system has been replaced by a variable rhythmically operating pattern design cylinder (weaving cylinder). This



- |                           |                          |
|---------------------------|--------------------------|
| 1. Weaving Cylinder       | 13. Rotation Pin         |
| 2. Pattern Control Wheel  | 14. Warp Stick           |
| 3. Cylinder Bracket       | 15. Shuttle              |
| 4. Side Frame             | 16. Balance Pin          |
| 5. Tension Control Handle | 17. Tension Control Bolt |
| 6. Stand Upright          |                          |
| 7. Stand Cross Bar        |                          |
| 8. Top Roller             |                          |
| 9. Frame Cross Bar        |                          |
| 10. Frame Cross Bar       |                          |
| 11. Warp & Cloth Rollers  |                          |
| 12. Tension Roller        |                          |

FIGURE 1. The MasterWeaver loom

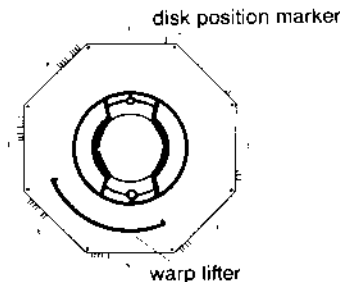


FIGURE 2. Warp-lifting disk

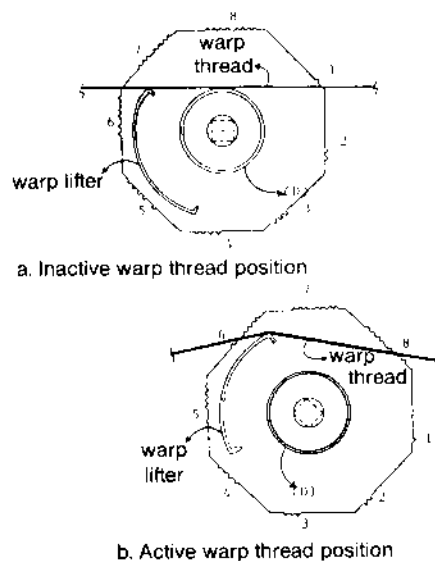


FIGURE 3. Warp movement

cylinder consists of a series of octagon-shaped warp lifting discs (Fig. 2) arranged side by side and mounted on a common shaft. These discs are individually and separately rotatable relative to the shaft and to one another, so that their relative position may be changed. To facilitate setting up different patterns, the eight sides of the discs have raised position markers by means of which the position of each disc on the shaft can be visually identified. At each end of the design cylinder there is a control wheel, which also has eight flat surfaces marked 1 to 8, at a 45 degree angle to one another. These numbers indicate the eight angular positions of the shaft and accordingly the mounted discs. By employing this type of shedding, the warp threads are not actually threaded into the heddles or the likes—as in the case of conventional looms. Instead the threads are run over the warp lifting discs, each of which has an active position—like a cam—for raising a particular warp thread and thereby producing the shed. Once the discs have been set up in their desired pattern along the shaft, and locked in position, weaving may then be carried out. Each time the shaft is rotated one-eighth of a turn, it is possible to form a new shed, through which the shuttle and weft thread may be passed.

From a study of the geometry of the warp lifting disc as illustrated in Figs. 3a and 3b, it will be apparent that the outer cam (C) should subtend an arc or angle such that it produces a lifting of the warp thread (T) between any four adjacent positions on the disc. The warp thread (T) will remain in its lower position during the other four positions of the disc. It will, however, be appreciated that if desired, the disc design could be altered by changing the cam geometry in such a way that it would provide a different set of warp lifting possibilities. A variety of such configurations is possible and no doubt would broaden the application and design capability of the weaving cylinder.

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## DESIGNING ON THE MASTERWEAVER LOOM

Referring to Figs. 3a and 3b, the numerical positions of the discs are shown, being numbered 1 to 8 in a clockwise direction. Thus it is apparent that in four consecutive angular positions—inactive positions 8,1,2,3—the warp thread (T) will remain resting on the inner ring (D) and will not be raised. Conversely, in the following four consecutive positions—active positions 4,5,6,7—it will be seen that the warp thread (T) will be raised. The relation between the sequence of the positions of the warp lifting discs and the sequence of the wheel positions of the complete cylinder may be represented graphically as shown in Fig. 4a.

The numbers at the bottom of the graph are related to the disc setting sequence across the cylinder, while the numbers at the left of the graph correspond to the control wheel positions of the cylinder. The filled in squares represent the raised warp threads, and the blank squares represent the lowered ones. The diagram in Fig. 4a, shows the principle of shed construction in all eight disc positions when all eight wheel positions are used. As one can see, at each wheel position there are always four warp threads raised and four threads lowered, wherever they might be located across the width of the warp and in whichever sequences. It is not necessary to use all the eight disc positions or all eight wheel positions. Some of them can be used repeatedly and others may be omitted, according to the desired pattern. The design may also be represented numerically. This method considers the actual progression of the numerical sequence of the disc positions in conjunction with the relative wheel positions of the cylinder. In this case, the graph which appears in Fig. 4a can be numerically represented as shown in Fig. 4b.

The first step in creating a pattern on the MasterWeaver loom is to determine the sequence for each

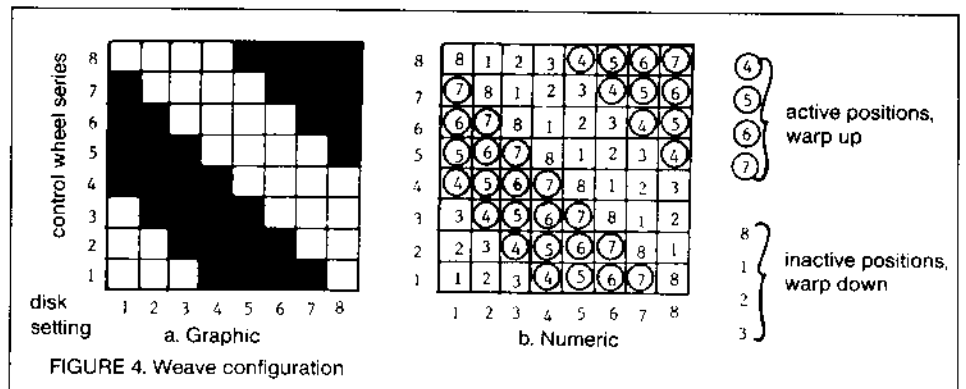


disc's position markers across the weaving cylinder. The second step is the turning of the complete cylinder between successive weaving interlacings from one to another of the control wheel's eight positions. At each wheel position, the shed will be different. Therefore, the pattern being produced depends on two factors:

- 1) The setting sequence of the warp lifting discs arranged at the first position of the control wheel.
- 2) The sequence of the successive wheel positions between consecutive wefts.

Because both the disc positions and the successive wheel positions of the cylinder can be varied, it is possible to create a wide range of novel weaves and structures by combining the two factors mentioned above and/or resetting them into a new relationship. In addition to the basic weave structures which are shown in Fig. 5, more elaborate designs can be achieved utilizing the new concept offered by the pattern design cylinder. To investigate the designing potential of the new loom, a systematic approach was employed by the author of this article which resulted in the creation of a variety of patterns. The designs shown in Fig. 6 and 7 are selected as examples to demonstrate the type of designs which can be achieved on the loom. The present design of the warp lifting discs allows only 6 E.P.I. to be employed, which places a restriction in producing firm structures with designs having long thread floats. The Company is, however, already overcoming this restriction by developing discs which will allow the application of 9 and 12 E.P.I.

One of the main advantages of the design cylinder is that it provides the ability to change the woven pattern from time to time without unwarping the shedding device. This is simply achieved by loosening the nuts on either end of the cylinder shaft and resetting the



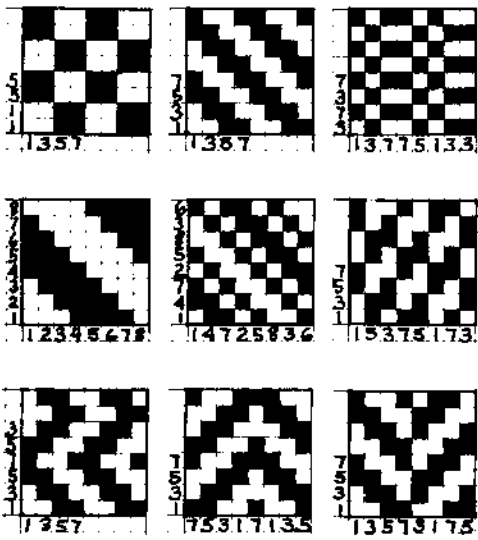


FIGURE 5. Basic weave structures and derivatives

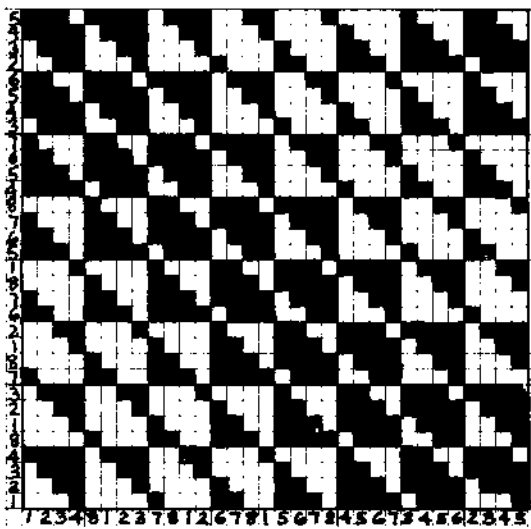


FIGURE 6. Weave patterns adapted to the principle of the design cylinder

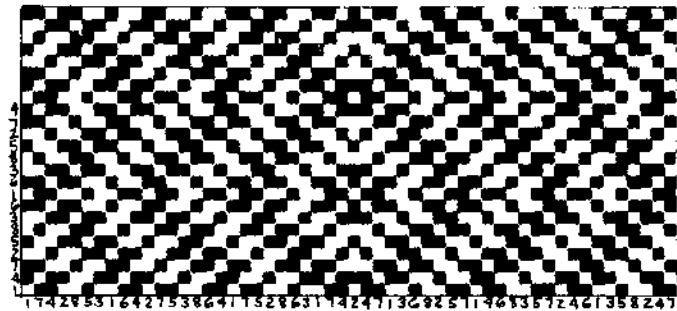
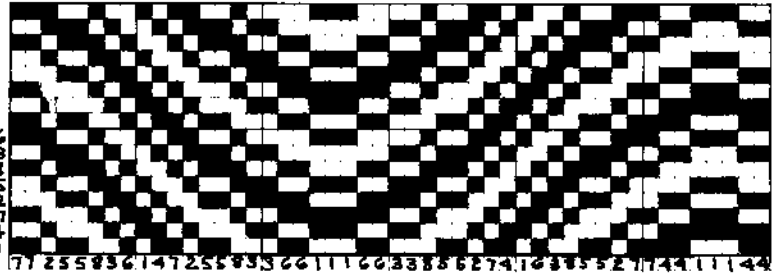
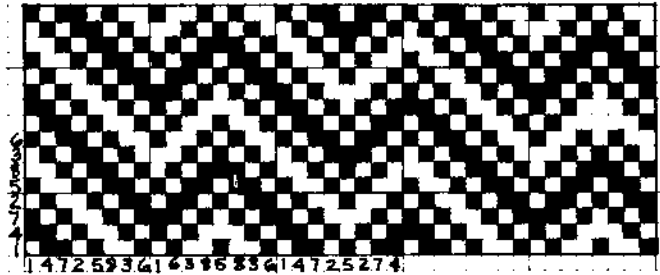


FIGURE 7. Weave patterns adapted to the principle of the design cylinder



FIGURE 9. Warping the MasterWeaver loom



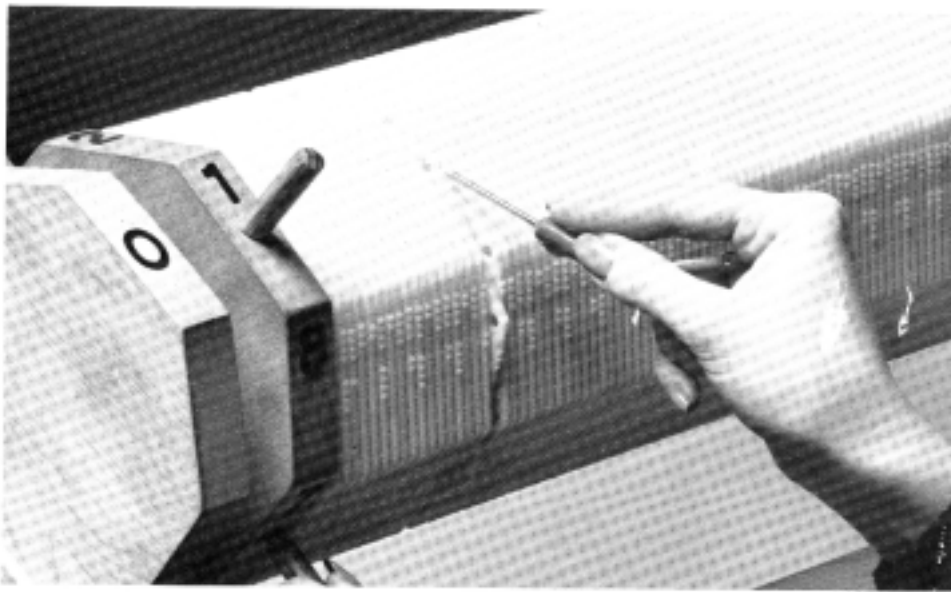


FIGURE 10. Setting up the disks

warp lifting discs into a different relationship. Preferably; all of this will be carried out in accordance with specific pre-designed pattern directions, so that the weaver can produce the desired pattern. In fact, this unique feature opens an entirely new area in hand-weaving designing. This is clearly demonstrated in the design shown in Fig. 8, which was constructed by changing and combining different patterns without interrupting the progress of the weaving process.

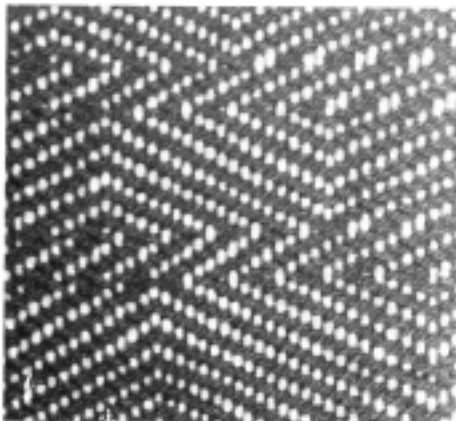


FIGURE 8. Sample cloth showing  $\frac{2}{2}$  twill variations. Author's design

It must be emphasized that simplicity is the predominant theme of the present design of the loom. Warping is simply carried out by rotating the frame of the loom within its stand, placing the warp threads (in the form of one continuous strand) between the warp lifting discs (Fig. 9). It takes less than 20 minutes to dress the loom regardless of the complexity of the

pattern. Pattern selection is made very easily by using a crochet hook placed into one of the small holes located at each corner of every disc (Fig. 10). The discs are rotated individually and then arranged so that the numerical series shown on the bottom of the pattern diagram appears in a straight line between the number 1 positions showing on the control wheel at each end of the cylinder (Fig. 11). Weaving on the MasterWeaver is also as easy as the previous steps. The shuttle is passed through the shed opening made by the weaving cylinder, then the control wheel is turned to the next position specified by the chosen pattern. The shuttle is used as a beater and the process is repeated. Due to the exceptional simplicity, the loom is ideal for introducing weaving to schools and to rehabilitation and craft centres.

It will, however, be appreciated that the application of the invention is not limited to the MasterWeaver loom shown in Fig. 1. The design cylinder is equally

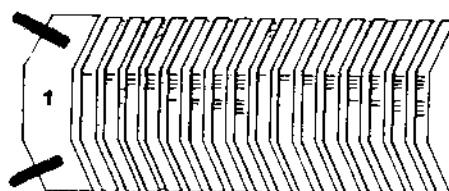


FIGURE 11. Control wheel alignment for disk setting

applicable to looms where separate warp threads are supported in a conventional type of loom structure with appropriate tensioners, let-off and take-up devices, such as are used for weaving greater lengths of cloth. At the same time, if the weaver only wishes to weave a fabric of a relatively limited length—for example for custom designed garments, cushion covers, wall hangings, etc.,—the present design of the loom is perfectly adequate. However, the warp length can be extended 30 feet, using a minor accessory available through MasterWeaver (1982) Ltd. (No. 14, Fig. 1).

In conclusion the new device for controlling the action of warp threads offers a new concept in weaving design and technology and deserves the attention of those who are involved in the design and application of new methods of fabric formation. The unique idea of relating designs and weave structures to numerical series lends itself to the application of computer-aided design, where a much broader range of fabric designs can be achieved. The potential of adapting the principles of the design cylinder of the MasterWeaver loom to modern high-speed automatic looms may open new areas in weaving technology.

1. Cdn.P 877738 and U.S.P. 3604468
2. MasterWeaver (1982) Ltd., 145 Front Street East, TORONTO, Ontario, Canada M5A 1E3

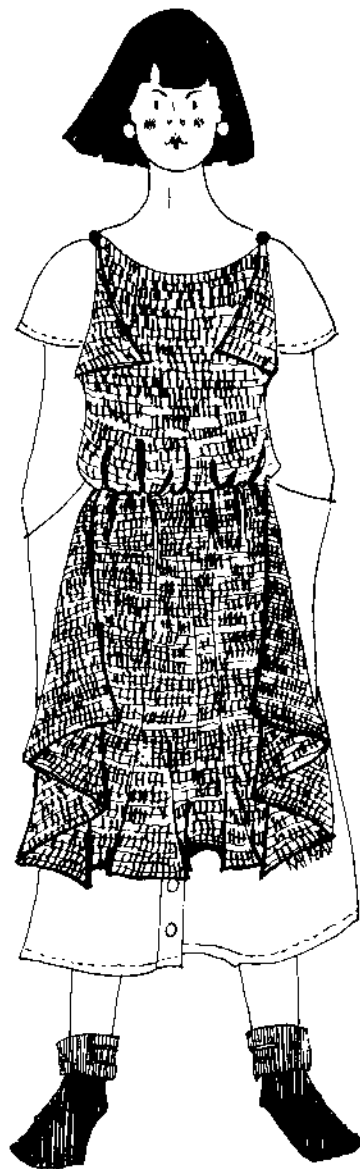
#### ACKNOWLEDGEMENT

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# fashion trends

by Susan Hick



Keeping one's cool is the prime objective at this point in the year.

It should be a very cool Summer color-wise. White is always the first to be considered, and its crispy brilliance is especially favored this season, whether it's used alone or combined with another hue.

The Neutrals come with such a number of descriptive names that finding the right yarns will present no problems: natural, cream, ivory, ecru, vanilla, oatmeal, tan, sand, beige, greige, putty, honey, and khaki. All combine with white for fresh colorations.

Of all the Pastels to be worked with, pink is probably the most prevalent. After that, pick a blush or a peach, celadon, periwinkle, mauve, curry, melon, or olive. The blues are inspired by the sea. California colors bring to mind citrus and tropical fruits and fresh veggies. Whatever the choice, in wovens they are all lightened further with more white and often used just as an accent with white and the neutrals.

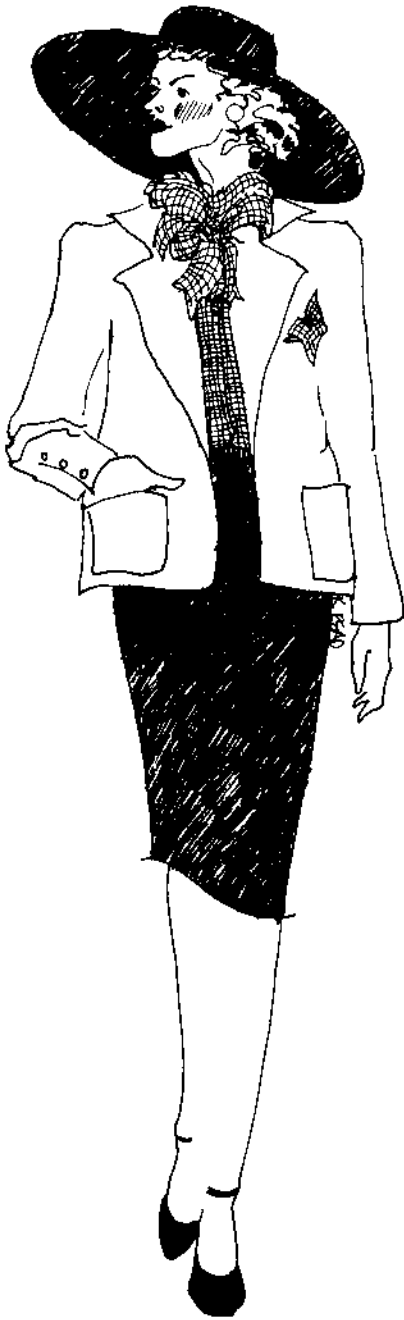
The tie-dyes of today are soft, subtle, and sophisticated, whether done in pastels or dark and monochromatic (not highly contrasting) tones. They are often seen in homespun fabrics so are not limited to fine, silky ones.

For several seasons now fashion fabrics have taken cues from classic men's wear. Fanciful colorations and imaginative combinations of yarns certainly lift these from the "why bother" category for the handweaver. Ticking stripes, shadow plaids, end-on-end constructions, chambray effects, and tweeds all offer the possibility of adding some dash and make handwovens look different from purchaseable fabrics, not to mention an endless variety to concoct of fabrics and patterns.

Printed fabrics rarely provide much that can be translated to loomed cloth, but this year there are several treatments that pique interesting ideas. The first is the growing popularity of hand-painted goods, especially graphics. Second is reading about a fabric designer who hand-marbelizes her textiles. And third is the proliferation of "random line" prints, which conjure up conceptions of laid-in threads and even "eye lash" applications.



illustrated by Kay Read



Another cooling aspect of this Summer's clothing is the shape in general, loose and easy and gracious. A cautionary note: the garments can appear so simple that they seem unconstructed. The good news, however, is that shaping is many times done with tucks and pleats.



Begin with the Chemise, that ubiquitous dress that can skim the contour while hiding all manner of faults, no doubt accounting for its recurring approval. The basic dress is quite uncomplicated, fluid, effortless, and feminine. It's not too big, just billowy enough to be appreciated for its cooling effects, and narrows toward the bottom. It may include such flirty details as oversized buttons, a kinky pleat or slit, well-placed cut-outs, straps that criss-cross the back, shaped edges, a dropped waist or a seam at the hips.

Skirts are straight when jacketed or full when not. Hemlines play at all lengths; it must depend on how well air-conditioned is one's space in addition to considering over-all proportions.

Pants are important, too, with volume added at the top by extra pleats or shirring, even using a drawstring at the waist. They then either fall straight or taper and may be cropped above the ankle. Bermuda shorts are cut wide, right for walking.



Jackets continue the theme of looseness and range from short and boxy to hip-concealing. Some appear to be just merely chopped-off long coats. They are collarless or have elongated lapels, can be a cardigan style, have one button and dolman sleeves.

Layering abounds and works for Summer thanks to lightweight, airy fabrics—even mesh. The Sweeper Coat is breezy, made with a hint of tailoring. Overalls, suspended or bibbed, are worn straight or belted. A Pinafore might be pulled over a T. The big Bowling Shirt doubles as a jacket.

Pockets seem to be embodied in most attire, though they're obviously not for the purpose of warming the hands. If they're not concealed in side seams, they're very frank, large patch ones on the outside. Fringe is sometimes an accent on a garment, always refined, never to look too homespun even though the fabric may. Linen tape is used more and more as a trim. Neck scarves of cotton mesh are triangular or oblong, tied high or low. Pouchy handbags are patchwork collages of a variety of fabrics.

So put aside the ruffles and frills for now, and think Clean Lines in these times. Give it the light touch for this season in the sun, and soften or crisp it all with white. ■

# TWILL AND PLAIN WEAVE BLOCKS WITH LONG-EYED HEDDLES

by Eve T. Broughton

On an 8-shaft loom one can thread two 4-shaft twill blocks. Each set of 4 shafts can be tied up for  $\frac{1}{3}$  twill,  $\frac{2}{1}$  twill and plain weave as shown in Fig. 1. Any tie-up of shafts 1 through 4 may be combined with any tie-up of shafts 5 through 8 to make a large number of combinations of 3-tone blocks (warp twill, weft twill and plain weave). Each additional block takes 4 more shafts. The design of Fig. 2 has 5 blocks and would thus need 20 shafts of which as many as 15 may have to be lifted at once. The purpose of this article is to show how this same weave structure can be woven on a 2-harness system, requiring far less shafts but which uses long-eyed heddles.

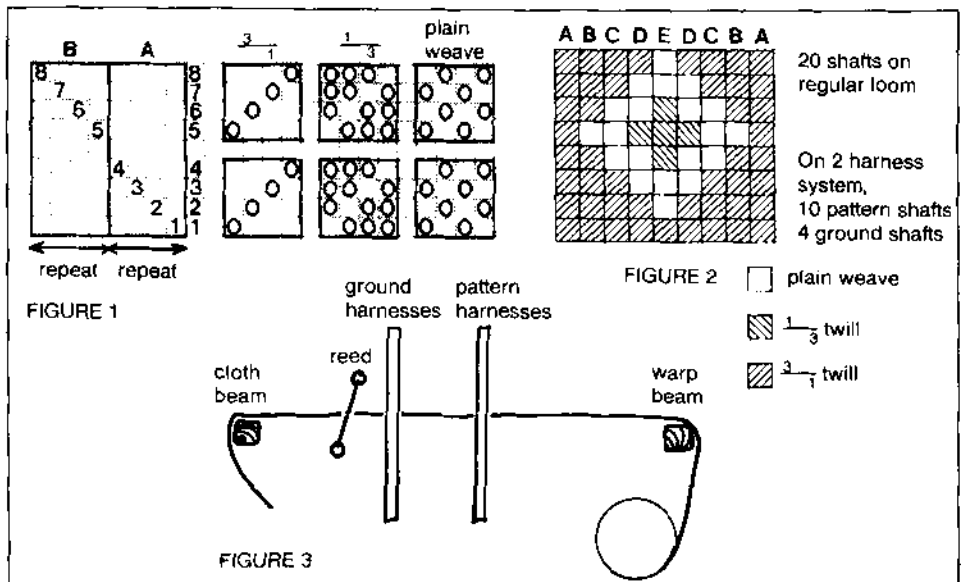


The two-harness system has a ground harness in front, a pattern harness in back (see Fig. 3). The pattern harness holds a pair of shafts for each pattern block (10 in the example of Fig. 2). In front, right behind the reed are the 4 ground shafts carrying long-eyed heddles. Each warp passes through two heddles: a heddle of a pattern shaft and a long-eyed heddle of a ground shaft.

Fig. 4 shows one pattern block (A). Each block has a multiple of 4 warp threads. The pattern shafts are called I and II, the ground shafts 1, 2, 3, and 4. All the threads through 1 and 3 also go through I, all the threads through 2 and 4 go through II. The tie-up of Fig. 4 shows that each ground shaft has its own treadle. For each weft pick one ground shaft has to be raised. The treadles are used in sequence 1, 2, 3, 4.

$\frac{1}{3}$  twill (warp twill): raise a ground shaft and no pattern shaft; raise all 4 ground shafts sequentially.

Plain weave: alternate raising the pattern shafts. Raising ground shafts 1 or 3 at the same time as I



and raising ground shafts 2 or 4 at the same time as II will not affect the weave.

**3<sub>T</sub> twill (warp twill):** raise a ground shaft and one pattern shaft; raise all 4 ground shafts sequentially.

Lift II with 1 and with 3. Lift I with 2 and with 4.

weft twill:	1	2	3	4
plain weave:	1 + I	2 + II	3 + I	4 + II
warp twill:	1 + II	2 + I	3 + II	4 + I

Chart I

Fig. 5 shows the addition of block B threaded on III and IV. Each block can be woven in weft twill, plain weave and weft twill. The two blocks may be combined in nine different ways:

weft-weft, weft-plain, weft-warp,

A B A B A B

plain-weft, plain-plain, plain-warp,

A B A B A B

warp-weft, warp-plain, warp-plain

A B A B A B

Using Chart I as a guide and changing I to III and II to IV for block B the nine treadlings are shown in Chart II.

Or

Weft twill: no pattern shaft.

Plain weave: odd pattern shaft with odd ground shafts.  
even pattern shaft with even ground shafts.

Warp twill: even pattern shaft with odd ground shafts  
odd pattern shaft with even ground shafts

On the reverse side of the fabric, plain weave is still plain weave, but weft-twill ( $\frac{1}{3}$ ) becomes warp-twill ( $\frac{2}{1}$ ), and vice-versa. Hence, the patterns may be woven on counterbalanced looms without any alterations of threading or tie-up. If the pattern being done has markedly more warp-twill than weft-twill (for a rising harness loom) one may wish to tie-up for the reverse face. Counterbalanced weavers will prefer more warp-twills than weft-twills in their tie-up.

Every block in the pattern requires a pair of pattern shafts in addition to the four ground shafts. This means a total of 10 shafts for a 3-block pattern, 12 shafts for a 4-block pattern, and 20 shafts for an 8-block pattern. The number of treadles needed will also depend on the pattern: one will need four for the ground shafts, and a pair for every different treadling block.

close together, but assign blocks to the various weave structures using these guidelines: (1) To the blocks most frequently appearing as plain weave in the design, assign pattern shafts I and II. Plain weave does not call for threads to be pulled in two directions at the same time. (2) Assign those blocks with the fewest warp threads to the rear-most shafts.

Use both feet (two treadles) for every throw of weft. The treadles can be "fine-tuned" to maximize your shed. It is very easy to weave warp-twill instead of plain weave if the shafts are not properly aligned.

Assign the middle treadles on your loom to the ground shafts. For the pattern shafts, keep each pair of treadles together.

### COMMENTS ON SETTING UP THE LOOM AND WEAVING

Position the ground shafts as close to the reed as possible.

Since some threads may be pulled up by the ground shaft, but down by the pattern shaft, a gap of several inches between these two shafts will improve the shed. Have all the shafts of the same harness

### NOTES FOR WEAVING ON COUNTERBALANCED LOOMS

Hang the ground harness separately from the pattern harness. By adjusting the height of each shaft relative to the reed, one can maximize the size of the shed.

Because some pattern shafts are tied to several treadles, they tend to hang lower. I put compression springs beneath the treadles near their attachment to the loom. This

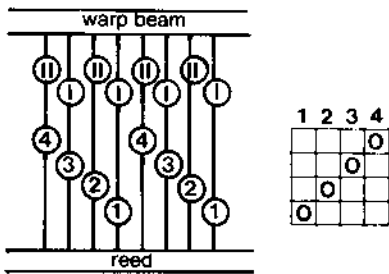


FIGURE 4

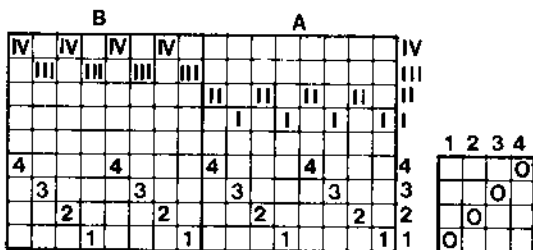
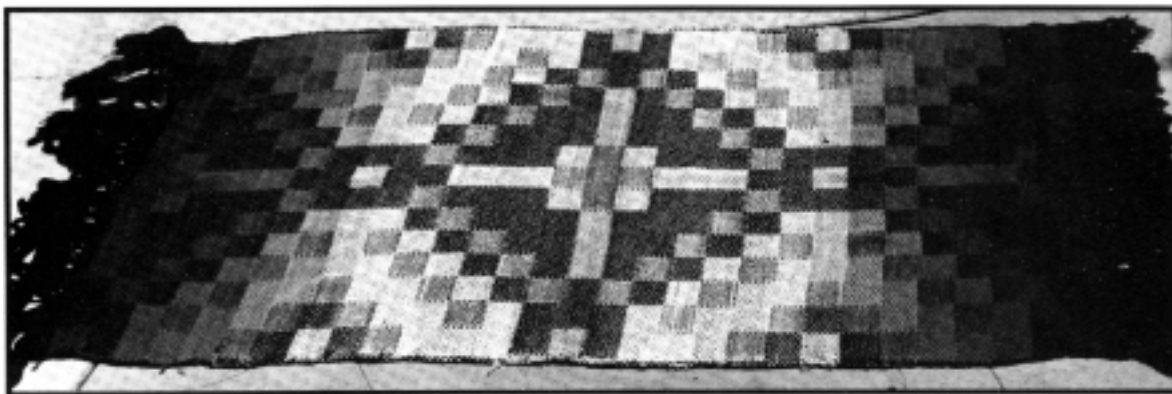


FIGURE 5

weft-weft	1	2	3	4
A B				
weft-plain	1 + III	2 + IV	3 + III	4 + IV
A B				
weft-warp	1 + IV	2 + III	3 + IV	4 + III
A B				
plain-weft	1 + I	2 + II	3 + I	4 + II
A B				
plain-plain	1 + I + III	2 + II + IV	3 + I + III	4 + II + IV
A B				
plain-warp	1 + I + IV	2 + II + III	3 + I + IV	4 + II + III
A B				
warp-weft	1 + II	2 + I	3 + II	4 + I
A B				
warp-plain	1 + II + III	2 + I + IV	3 + II + III	4 + I + IV
A B				
warp-warp	1 + II + IV	2 + I + III	3 + II + IV	4 + I + III
A B				

Chart II



negates the weight of the treadles on the shafts.

My loom has lams pivoting on one side of the loom. I found that for the easiest action of the treadles, the treadling blocks with the fewest assigned shafts should be tied to the treadles closest the fulcrum, as these are the hardest treadles to push down. Those treadling blocks with the most shafts are tied to the treadles furthest from the fulcrum. A very rarely used treadling block will be assigned to a treadle close to the fulcrum when possible. The treadles will then be "out-of-order," but one can use masking tape to identify them. Keep your pairs together!

Remember, for sinking shed looms:

Warp twill: no pattern shaft

Plain weave: *odd* pattern shaft with *odd* ground shafts  
*even* pattern shaft with *even* ground shafts

Warp-twill: *even* pattern shaft with *odd* ground shafts  
*odd* pattern shaft with *even* ground shafts

Chart 3



FIGURE 6

**PROJECT: Seven-block twill and plain weave rug.**

**Warp:** black 3-ply acrylic worsted weight yarn, approx. 2 lbs.

**Sett:** 8 epi (30/10).

**Weft:** 3-ply worsted weight acrylic yarn.

Rust	(R)	2½ oz
Light rust	(L)	3½ oz
Gold	(G)	3½ oz
Yellow	(Y)	3½ oz
White	(W)	9½ oz
Cream	(C)	2 oz

The weft color for each block is shown on the pattern draft of Fig. 7.

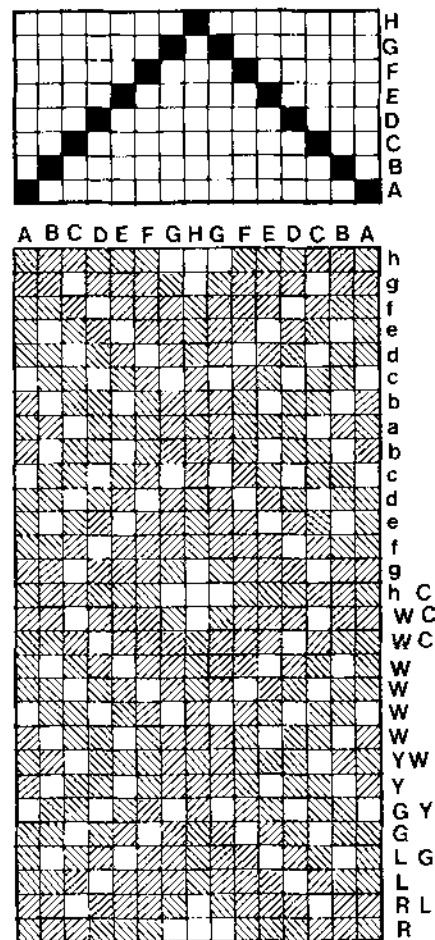
**Size of the project:** 45" x 82" (1.14 m x 2.8m).

**Pattern:** Fig. 7 shows the pattern for the rug. It combines weft-twill, warp-twill and plain weave.

**Threading:** See Fig. 6.

The selvages are threaded as shown. Also use floating selvages; for these, double the thickness of the warp threads. They are tied to the front rod, run through the reed

in the dent adjacent to the last regular warp thread, and through the harness frames without passing through any heddles. The floating selvedge threads are not wound on the warp beam. Instead, each one is held taut with a 1 to 2½ lb. weight.



- 3 , warp twill
- plain weave
- 1 3 weft twill

FIGURE 7

Pass the shuttle over the floating selvedge threads on the right-to-left throw, and under the floating selvedge threads on the left-to-right throw.

**Tie-up:** Fig. 8 shows the 8 treading blocks. For each treading block it is shown which blocks weave warp-twill (even pattern shafts lifted with ground shafts 1 and 3 and odd pattern shafts lifted with ground shafts 2 and 4), and which blocks weave plain weave (odd pattern shafts lifted with ground shafts 1 and 3 and even pattern shafts lifted with ground shafts 2 and 4). The threading block not listed will weave weft-twill.

Fig. 9 shows a practical tie-up. A ground treadle and a pattern treadle will have to be depressed at the same time.

The treadles on the loom are arranged as in Fig. 10.

**Weaving:** Begin with 10 picks of plain weave with the black weft. Alternate ground shafts 1 + 3 and 2 + 4.

For each treading block repeat the 4-pick weft sequence six times (see Figs. 7 and 9). End with 10 picks of plain weave.

**Finishing:** Tie the warp ends in groups of 8 with an overhand knot.

treading blocks	3 warp twill blocks	plain weave	pattern shafts with odd numbered ground treadles (1, 3)	pattern shafts with even numbered ground treadles (2, 4)	pattern treadle
a	B,G	C	4 5 14	3 6 13	1 2
b	A,G	B,E	2 3 9 14 16	1 4 10 13 15	3 4
c	F	A,D	1 7 12 16	2 8 11 15	5 6
d	E,G	C,F	5 10 11 14	6 9 12 13	7 8
e	D,F,G	B,E	3 8 9 12 14	4 7 10 11 13	9 10
f	C,E, F,G	D	6 7 10 12 14	5 8 9 11 13	11 12
g	A,B, D, E, F	C,H	2 4 5 8 10 12 15	1 3 6 7 9 11 16	13 14
h	B,C	G,H	4 6 13 15	3 5 14 16	15 16

FIGURE 8

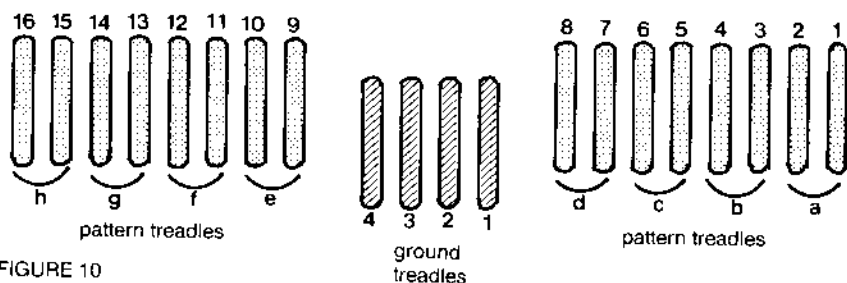


FIGURE 10

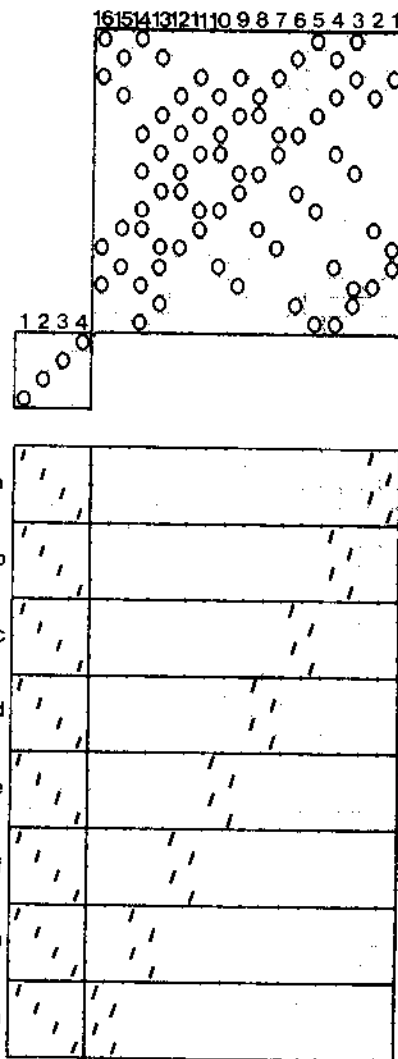


FIGURE 9

**ABOUT THE AUTHOR:** Eve Broughton is a happy California weaver. In 1972 she borrowed Edward Worst's book, *Foot Power Loom Weaving and*, using his instructions, built a 4-shaft, 45" counterbalanced loom and learned to weave on it. The loom has grown now to 20 shafts and 20 treadles, as she explored more complex weaves. Last year she attended her first weaving conference, Northern California Handweavers, and found it a stimulating experience.

Eve's joy in weaving is in trying new weaves and creating her own patterns. Of the weave she has shared with *The Weaver's Journal* readers, she explained, "It stemmed from an attempt to create a complex damask effect, but as I played with it, I saw that three separate tones could be achieved."

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# THE BLANKET WEAVE

by Annette Robitaille

Translated from the French by Clotilde Barrett

The Blanket Weave, which Harriet Tidball mentions in *The Weaver's Book* and also in *The Handloom Weaves*, is a weaving technique which is little known and not often used. Nevertheless, this weave structure produces a cloth which is well interlaced, yet soft, and which is therefore particularly suited for blankets. This weave offers also the opportunity to create designs based on a 6-block profile draft on a 4-shaft loom.

## THE DRAFT

### The Blocks

The first four blocks are threaded in the same way as the blocks of Colonial Overshot (see Fig. 1). The weaving of these blocks is done "on opposites" with two wefts: color *D*, (■), color *L* (□).

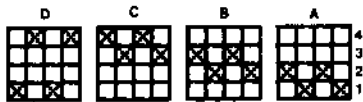


FIGURE 1

This method of weaving (on opposites) does eliminate the need for a tabby binder. Therefore the combinations 1 + 3 and 2 + 4 can be used to thread two additional blocks.

A fifth and a sixth block may thus be threaded as shown in Fig. 2.

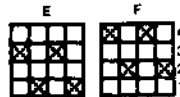


FIGURE 2

In the threading of Blanket Weave, block E has to be placed between D and A; block F has to be placed between B and C (see Fig. 3). Note that the addition of these blocks causes a block of an odd number of warp ends to be succeeded by a block of an even number of warp ends; e.g., 4, 5, 4, 5, 4, in the example of Fig. 3. And, as in an Overshot threading, two adjacent blocks always have a common warp thread.

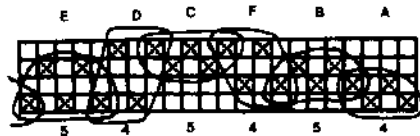
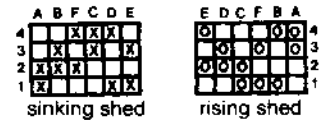


FIGURE 3

## Selvages

The selvedge threading is a straight draw.

## Tie-up



## Profile draft

For the development of profile drafts it is easiest to work with blocks of the same size, e.g., 4, 5, 4, 5, 4, 5, ends or 6, 7, 6, 7, 6, 7, ends or 8, 9, 8, 9, 8, 9, ends. The progression of the blocks should be as smooth as possible. To accomplish this, use only the progression shown in Fig. 3 in one direction or the other (see Figs. 4a & b). If this rule is not observed, there will be awkward floats at the transition from one block to another. Pointed and reverse profile drafts work well but the block corresponding to the turning point has to be one with an odd number of warp ends. (This same rule applies to the turning blocks of Overshot.) In Figs. 4a & b, the turning blocks are indicated with arrows and have an odd number of ends.

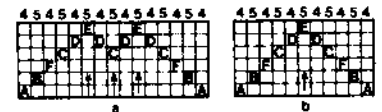


FIGURE 4

	Weft <i>D</i> (■)	Weft <i>L</i> (□)
Block A	<i>D</i> in A: shafts 1 + 2 down (3 + 4 up)	<i>L</i> in C: shafts 3 + 4 down (1 + 2 up)
Block B	<i>D</i> in B: shafts 2 + 3 down (4 + 1 up)	<i>L</i> in D: shafts 4 + 1 down (2 + 3 up)
Block C	<i>D</i> in C: shafts 3 + 4 down (1 + 2 up)	<i>L</i> in A: shafts 1 + 2 down (3 + 4 up)
Block D	<i>D</i> in D: shafts 4 + 1 down (2 + 3 up)	<i>L</i> in B: shafts 2 + 3 down (4 + 1 up)

The weaving of blocks E and F is done similarly to the other blocks thus:

Block E	<i>D</i> in E: shafts 1 + 3 down (2 + 4 up)	<i>L</i> in F: shafts 2 + 4 down (1 + 3 up)
Block F	<i>D</i> in F: shafts 2 + 4 down (1 + 3 up)	<i>L</i> in E: shafts 1 + 3 down (2 + 4 up)

## Squaring the blocks

To square a block, repeat the two opposite picks as often as there are warp ends in the block *minus one*. Thus, to weave the threading of Fig. 3 as the blocks are drawn in

and with *square blocks*, weave as follows (rising shed):

	Weft D (■)	Weft L (□)	
Block A	3 + 4	1 + 2	3 times
Block B	4 + 1	2 + 3	4 times
Block F	1 + 3	2 + 4	3 times
Block C	1 + 2	3 + 4	4 times
Block D	2 + 3	1 + 4	3 times
Block E	2 + 4	1 + 3	4 times

To weave as the blocks are drawn in, the treading order of the blocks has to be the same as the threading order of the blocks.

**WARP AND WEFT**

The size and the count of the warp and the weft are not the same.

**Warp:** Fine yarn sett twice as far apart as for twill. For example: if a yarn is sett as 24 epi for a twill, it should be sett at 12 epi for Blanket Weave.

**Weft:** This yarn should be heavier than the warp (at least twice as thick) and be of two colors *L* and *D*. The first is usually the same color as the warp; the second is a contrasting color (or texture). The weft count should be so that there are twice as many picks per inch as there are ends per inch. Thus, for a warp sett at 12 epi there should be 24 ppi.

**PROJECT-BEACH ROBE/SKIRT**

**Warp:** 2/16 cotton, natural.

**Weft**

**Background**

For the *D* yarn (■): line linen boucle, unbleached.

For the *L* yarn (□): natural cotton with slight slub.

**Pattern bands**

For the *D* yarn (■): 10/2 linen in 4 different colors.

For the *L* yarn (□): natural cotton with slight slub.

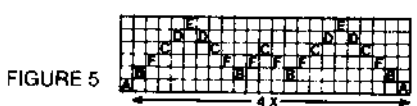
Note that all of the weft yarns are of the same grist. They vary in fiber, color and texture.



**Sett:** 15 epi (60/10)

**Weft count:** 30 ppi.

**Profile draft:** See Fig. 5.



**Threading:** See Fig. 6.

**Width in the reed:** Approx. 58" (1.47 m).

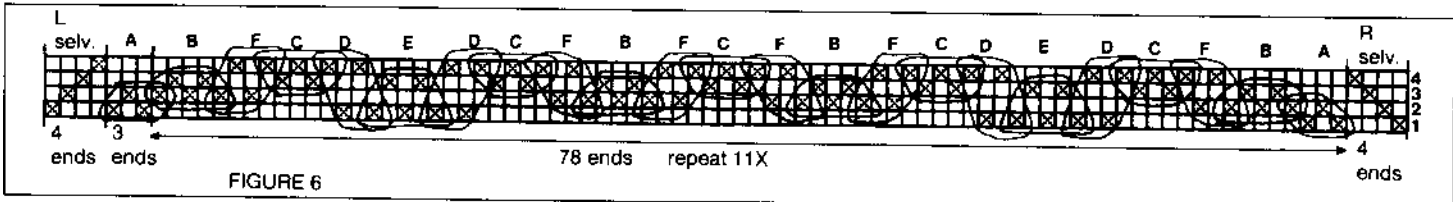
**Total number of warp ends:** 869 ends.

Left selvedge: 4.

Right selvedge: 4.

4 repeats of 78 ends: 858.

Balancing block A: 3.



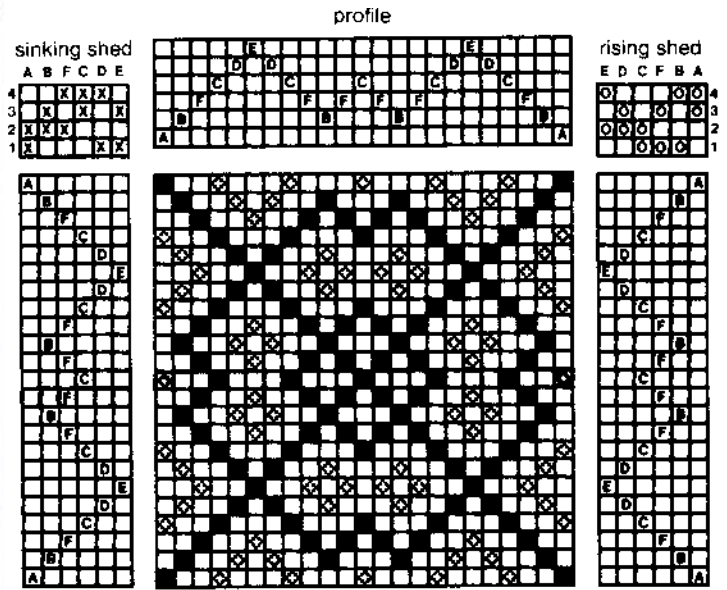


FIGURE 7

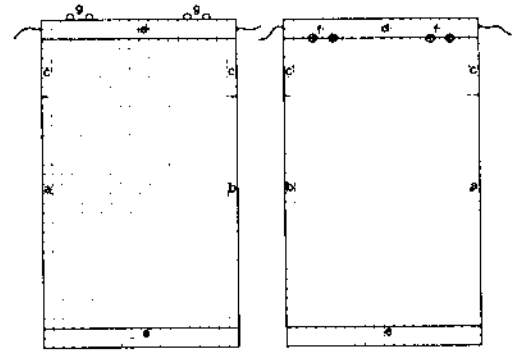


FIGURE 8

**Treading.** The entire block development of the pattern, including the treading profile and the tie-up is shown in Fig. 7. The cloth is woven as the blocks are drawn in. Thus the treading profile is the same as the threading profile.

The cloth is woven on opposites. The treading blocks of Fig. 7 are woven as follows:

The two picks of each block are repeated until the block has the desired height.

**Sewing instructions:** See Fig. 8.

- a. right side seam.
- b. left side seam.
- c. sleeve cap of the beach robe/false pocket opening of the skirt.
- d. casing for drawstring. Shoulder and neck opening for the robe/waistband for skirt.
- e. lower hem.
- f. buttons.
- g. buttonhole loops.

	Yarn D (■)	Yarn L (□)
Block A	1 · 2 down (3 · 4 up)	3 · 4 down (1 · 2 down)
Block B	2 · 3 down (1 · 4 up)	1 · 4 down (2 · 3 down)
Block F	2 · 4 down (1 · 3 up)	1 · 3 down (2 · 4 down)
Block C	3 · 4 down (1 · 2 up)	1 · 2 down (3 · 4 down)
Block D	4 · 1 down (2 · 3 up)	2 · 3 down (4 · 1 down)
Block E	1 · 3 down (2 · 4 up)	2 · 4 down (1 · 3 down)

**ABOUT THE AUTHOR:** Annette Robitaille is a Canadian weaver whose main interest is handwoven garments. She likes to make one-of-a-kind garments with a "handwoven" character. She personally handles each step in weaving a garment from the choice of fiber, color, weave structure, weaving, tailoring and finishing the garment. This limits her production but is appreciated by her well-chosen clientele.

To create these unique fabrics, she had to acquire an in-depth knowledge of weaving techniques. This led to a study course in theory and practice of weaving which she has taught for the last five years. She is writing a series of articles in French based on her class notes, called "Cahiers de Tissage." Each year she makes an in-depth study of another technique, which she teaches. Her studies of Warp Rep Effects and of Blanket Weaves have been published in The Weaver's Journal.

Annette works on four looms, a 60" 12 shaft floor loom with two beams, a 24" 12 shaft table loom with two beams, a 36" 4 shaft loom and a 24" 4 shaft loom. She is currently president of Tisserands Createurs de Quebec, inc. She writes: "I am 38 years old and I hope to live to be 100 in order to realize all my weaving projects."



# BOOK REVIEWS

Unless otherwise noted, all book reviews are by Clotilde Barrett.

*OF COVERLETS, THE LEGACIES, THE WEAVERS* by Sadye Tune Wilson and Doris Finch Kennedy © 1983 by the authors. Published by Tunstede, 212 Vaughn's Gap Rd., Nashville, TN 37205. 11" X 14" format, 496 pp, hardcover, \$50.00 plus \$3.90 P/H.

This is a beautiful and luxurious book about bedcovers from the 18th and 19th century in the state of Tennessee.

In 1978, the Handweaver's Guild of Nashville, decided to be a sponsor for a Tennessee textile history project. It was to be conducted by Sadye Tune Wilson and Doris Finch Kennedy, who are knowledgeable weavers, writers and can make photographic records. They researched museum archives and contacted families who had coverlets and information on them. This work took five years and the results will be published in three volumes. The first one is just published and is the subject of this review.

About 1000 textiles have been analyzed and documented. All the written and photographic records on these are now preserved. Scores of coverlets, many of them in plain weave but most in 4-shaft overshot, and several counterpanes with various other 4-shaft weave structures are the subject of this book. All are lavishly illustrated with colored and black and white photographs. The data for each textile includes the pattern, the owner, the origin, the weave structure, the size, the warp, the weft, the provenance and all the known information on the weaver. In many cases the authors have included some additional notes that are relevant to the textile or its origin, as well as copies of old photos of the weavers, their families and homesites.

The drafts given are based on the old hand-written draft systems used by the early coverlet weavers but the authors have developed a more elaborate system which allows them to emphasize the block design of each motif that is included in the pattern. This new system for recording overshot coverlets is clearly explained in the beginning chapters of the book. It takes a little time to get used to this system which involves a lot of codes but, in the end, it is rather easy to master. In these chapters the authors condense a great deal of information on overshot in very few pages. They did an outstanding job setting up this new classification system for 4-shaft Colonial overshot. The graphic motif classification shows how a pattern evolves and is a very valuable design tool for the contemporary weaver who wants to explore new patterns. The color photos are a real inspiration to explore various color effects on overshot weaves.

For all the coverlets in overshot weave, the reader is given an in-depth understanding of the weave structure, the draft, the motifs and the patterns. There is an excellent discussion of the old handwritten drafts and their contemporary interpretation. However, for the counterpanes, mostly white on white, which are discussed toward the end of the book, the information is far from complete. These are woven in a variety of 4-shaft weaves such as

honeycomb, M's and O's, and spot weaves. For these there are no drafts nor adequate data with regard to the patterns and weave structures. The photography is not sharp enough to allow the reader to make a fabric analysis from the pictures. This book is a real treasure in so many ways that one may tend to forgive the authors for the omissions in the information on counterpanes. Nevertheless, this data should be recorded and published in order to preserve our heritage.

This book has several appendices which refer to coverlet patterns and owners. These are valuable research tools. The book also is indexed and has a bibliography.

Leafing through a publication like this one is truly a visual pleasure. Each page is beautifully designed and gives a great deal of knowledge on the patterns, the use of yarns and the traditions of the old Tennessee coverlets. It is a great tribute to the women of Colonial families.

*WEAVING SOURCEBOOK, IDEAS AND TECHNIQUES* by Else Regensteiner © 1983. Published by Van Nostrand Reinhold Co., 135 W. 50th St. New York, NY 10020. 8½" X 11" format, 176 pp., hardcover, \$27.50. ISBN 0 442 27507 2.

This is the second edition of the *Weaver's Study Course* by Else Regensteiner. It has been fully revised, updated and expanded.

This book is the second major publication by the author, who writes: "In my first book, *The Art of Weaving*, I was mainly concerned with basic weaves and techniques. Here, I want to expand that knowledge by presenting more advanced weaves, other varieties of techniques, and a fresh new look at the many possibilities inviting exploration."

The book sometimes appears as a project book, sometimes as a technical weaving text, sometimes as a pattern book and most often as a book on textile art dealing with color and texture.

Chapter 1, *Fabrics for Clothing*, gives some general information for successful projects. The author then discusses weave structures with emphasis on color effects and rich surface texture. Chapter 2, *Clothing accessories*, introduces the reader to double weave, to the popular loom-shaped triangular scarf, to inkle weaving, card weaving, other fiber techniques suitable for ornamentation and to loom shaping.

Chapter 3, *Fabrics for Interiors*, emphasizes loom-controlled patterns giving a variety of textures from subtle to bold and includes many highly decorative structures seldom described in other books. Pick-up methods are often given as a substitute for harness control. This chapter also includes rug and tapestry techniques including shaft-switching and pick-up methods.

Chapter 4, *Interior Accessories*, is filled with inspiring ideas and has a variety of technical information on weaving patterns and also on

non-loom techniques. This approach is carried on in Chapter 5 entitled *Toys*.

Chapter 6, *Wall Hangings and Sculptural Weavings*, deals with tapestry techniques but also some very decorative loom-controlled pattern weaving. It includes notes on dyeing and off-loom techniques.

An important asset to this book are the many photographs of projects that weavers from all over the U.S. have contributed in order to stimulate the reader or introduce new concepts and innovative ways to use fibers for functional and decorative projects.

The weaving patterns that can be found throughout the book show a great variety of designs and textures but once they are out of sight they are difficult to refer back to unless they have a specific name which is indexed in the back of the book.

The purpose of the book as shown in the quote by the author is well fulfilled and many weavers will be encouraged to be more creative and to try new patterns.

*THE FIBERARTS DESIGN BOOK II*, edited by Jeane Hutchins, © 1983. Published by Larks Books, 50 College St., Asheville, NC 28801, 8½" X 11" format, 191 pp, hardcover: \$27.95; softcover: \$18.95. ISBN 0 937274 06 2.

This book is an illustrated catalogue of contemporary fiber pieces which have been selected by staff members of the publishing company.

Nine hundred artists applied to be included in this catalogue. From their slides and photographs, a total of 520 have been reproduced in this book, many in color. Each entry is shown with the name of the artist, the title of the work, the weave structure, the fibers and the size. Often there is an additional comment on the work by the artist him/herself. The works are roughly categorized in groups which separates 2 and 3 dimensional work, miniatures, wearables, etc.

The publication is a real success. It is a delight to leaf through the pages and become aware of the large variety of textile art that is being done today. The quality of the work and the large variety of concepts are impressive. As a textile craftsman myself, I appreciate the technical information that is given in the captions. It is minimal but satisfies my inquisitive mind.

Aside from "wearables" the number of functional pieces, such as rugs, pillows and woven bedcovers, is alarmingly small. Does that mean that such projects were not entered or does it mean that the artistic qualities of the entered pieces were so low that they could not be included in a catalogue of "fiber arts"? As one leafs through the pages of this book it might be well to enjoy the fiber pieces but also to wonder why there still seems to be a conflict between functionalism and art. A similar book, dealing with ceramics, would certainly include teapots, bowls and place settings. Why?

**PREHISTORIC TEXTILES OF THE SOUTHWEST** by Kate Peck Kent © 1983, by the School of American Research, Santa Fe, NM. Published by the University of New Mexico Press, Albuquerque, NM 87131. 8" X 10½" format, 316 pp., hardcover, \$70.00. ISBN 0 8263 0591 1.

This scholarly book is the fourth of the Southwest Indian Arts series sponsored by the School of American Research. The purpose of this series is to examine and document a wide range of Southwest Indian Arts from the anthropological, technical and aesthetic perspectives.

In this particular volume it is the intention of the author "to describe and to ascertain the origin of the kinds of fabrics made by Indians of the prehistoric Southwest in order to understand the history and the evolution of the textile crafts and their importance in the lives of the people."

In this book, Kate Kent analyzes the materials, weave structures and designs of the many fragments of textiles found in prehistoric Southwestern sites. Her deep understanding of archaeology and ethnography enables her to interpret this textile art and clarify the technological, historical and cultural significance of these finds.

For the purpose of this study, textiles are defined by the author "as flexible or pliable fabrics constructed from spun plants and animal fibers by various weaving, looping, netting, plaiting, braiding processes." Baskets and mats are not included.

The earliest archaeological textiles which have survived, date from A.D. 200. They reveal non-loom techniques and a variety of fibers. The fibers of the prehistoric Southwestern textiles include human hair, dog hair, wool and hair from wild animals, feathers, several bast and leaf fibers and finally domesticated cotton. The author discusses the preparation of these materials including their spinning and plying. This same chapter includes a discussion of mineral and organic dyes.

The next chapter analyzes and describes non-loom techniques for single element fabrics. These techniques include looping, netting, oblique interlacing (braiding), interlinking (plaiting) and wrapping. All the structures are clearly explained and illustrated. This study is followed by a discussion of non-loom fabric structures which require a warp and a weft. Archaeological finds of this type are divided into the following: narrow bands, wide fabrics with weft twining and wide plain weave fabrics which are woven without shedding devices.

The last group of fabrics discussed in the book are woven on a vertical loom and include some evidence of the use of back-strap looms. The weave structures range from plain weave, open weaves and gauze weaves to complex float weaves, twills and compound weaves. This chapter also includes surface decoration such as embroidery, tying and painting.

These highly technical studies lead to a discussion of designs. These designs reveal a great deal about the artistic aptitudes and technical skills of prehistoric Southwestern society. Some designs are tremendously time consuming even though most textiles are util-

itarian articles or clothing.

Throughout the book the study of archaeological fragments is supported by ethnographic data such as early historical documents. It leads to the recognition of regional styles and a better understanding of cultural developments and interrelationships.

The text is well illustrated; technical drawings clarify written descriptions; clear black and white photographs show many of the objects (textile fragments and tools) that have been excavated; handsome color plates bring out the aesthetic qualities of these pieces and give a glimpse of the color range used by the prehistoric Indians of the Southwest.

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**SILK ROADS. CHINA SHIPS** by John E. Vollmer, E. J. Keall, E. Nagai-Berthrong © 1983. Published by the Royal Ontario Museum, 100 Queen's Park, Toronto, Canada M4S 2C6. 9½" X 10¼" format, 240 pp., soft-cover, \$19.95 (Canadian currency).

This book serves as the catalogue of an exhibition of East-West trade which will travel to a number of museums and art galleries in the United States and Canada in a tour that will last through 1986. It is a beautiful book richly illustrated with colored and black and white photographs. The high quality of the graphics allows the reader to enjoy the richness of the objects on exhibit. Many photos and drawings also illustrate the historical and geographical documentation which constitutes a major portion of this book.

The silk roads and the China ships played an important role in the dissemination of a large variety of art objects, of technology, beliefs and customs.

The various well-written chapters of this book outline the historical context in which the trade was conducted from the 2nd century B.C. on. They inform the reader of all the events which influenced the trade routes and the types of commodities that were exchanged: the succession of kings and chieftans, the rise and fall of empires, the struggles for political power and wealth, the lust for adventure, the craving for knowledge and the roles of the various religions. Within this framework of history, the authors narrate the intrigues of international trade, the exchanges of goods and the enrichment or depletion of treasuries. The commodities of this trade are objects that are rare and exotic and will enhance the status of a certain segment of the society which can afford to own them.

Throughout the book the authors stress the great impact trade has had over the centuries. Merchants manipulate the market by adapting it to the demands of their customers; trade directs the flow of wealth; trade disperses knowledge; trade is responsible for new inventions and discoveries; and trade has an impact on the aesthetics of the commodities that are involved. The interplay of power, cultural developments, aesthetics, skills, adventure, and danger is presented in this book in a scholarly yet lively text which is richly illustrated with many art objects from the collection of the Royal Ontario Museum.

The detailed historical introduction which precedes the catalogue of the exhibit is essential in order to understand the meaning

of the objects and enjoy the subtle variations in designs and patterns. This exhibition of trade is not merely a display of silk and China; the objects included show the tremendous variety of commodities exchanged as a result of international trade over a long period of time.

For a weaver interested in textile history, especially silk, this book is indispensable because the authors have sorted out all the historical events from 300 B.C. till the early 19th century which are of special importance to the dissemination of silk goods.

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**A PORTFOLIO OF AMERICAN COVERLETS** compiled by Carol Strickler, Vol. 5. Published by Carol Strickler, 1690 Wilson Ct., Boulder, CO 80302. 8½" X 11" format, loose-leaf in folder, \$6.00 ppd.

This is the 5th publication of a series. Each contains 25 loose-leaf information sheets on 19th century American woven coverlets. This volume deals only with 4-shaft overshot patterns. For each pattern, the author shows at least two variations of the draft. Such a variation, large or small, often accompanied by a different use of yarn, sett and color, can give the coverlet a very distinctive look. The author makes this very apparent either by showing photographs of such coverlets side by side or making the variations clear through computer generated drawdowns.

The entire series of loose-leaf portfolios compiled by Carol Strickler is a great reference for collectors and weavers. However, the patterns are not indexed and as the pages are increasing in volume, it becomes more difficult to keep track of all the good information that is contained in these folders.

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**WEAVE IT! 28 PROJECTS FOR YOUR HOME** by Marilyn Meltzer © 1981 Van Nostrand Reinhold Co. 96 pp. 8½ X 11" format, paperback, \$9.25. ISBN 0 442 25293 5.

This book was first published in hardcover in the Fall of 1981 and was reviewed in *The Weaver's Journal*, Winter 81-82, issue 23. Nothing seems to be changed since the earlier edition, even the suppliers list has not been updated.

This is a project book with step by step instructions on how to weave 28 useful or decorative projects.

The book starts with general instructions on making a warp, dressing the loom and drafting. The introductory chapter also deals with basic weaves, weaving tips, finishing techniques and some calculation aids. This section is rather superficial but serves as a quick reference later when the instructions are given for the projects.

The projects themselves are quite interesting and innovative. There is a good variation as to their use, their weave structure, their color, and their use of fibers. The projects are contributed by different artists. This exposes the reader to a variety of approaches for using woven cloth. Yet, the step by step instructions are written in the same style which unifies the book and makes it easier for a beginning weaver to weave one project after another.

**BEGINNER'S GUIDE TO WEAVING** by Ken Ponting © 1982 Butterworth & Co. Published by Focal Press, 10 Tower Office Park, Woburn, MA 01801. 5" X 7 1/4" format, 138 pp., paperback, \$9.95. ISBN 0 408 00574 2.

Don't let the title of this book mislead you. This is not a step by step instruction book to teach someone how to weave. On the contrary, this informative little book will fascinate all weavers and all people interested in the development of the weaving industry during the last 250 years. First the author gives a concise description of the most important types of looms: the frame loom, the vertical loom, the horizontal looms, which include the treadle loom, the draw loom, and the dobby and jacquard systems, and finally, the ribbon loom.

Warping, the most important auxiliary process, is described at length. This chapter does not only include warping on a frame but also more elaborate techniques, using a creel and mill to measure the warp. This chapter contains useful information for the handweaver concerned with speed in the production of his goods.

Next the author discusses the basic weave structures: plain weave, twills, satins and double weave.

The following chapters deal with the gradual mechanization of the handloom during the last 250 years up to the mid 20th century where highly automatic weaving coexists side by side with handweaving as it has been practiced for thousands of years.

The story starts with the invention of the fly-shuttle. Next comes the inventions to drive the loom with power; then the application of power to the dobby and jacquard systems; finally the complete automation, where the weaver becomes unnecessary and all control is in the hands of a remote operator.

It is amazing that handweaving has survived through this evolution, not only in the craft sector but also in the industrial sector, such as in the production of Harris Tweeds.

The final chapter of the book is on finishing and piece dyeing with a short history of the development of the finishing process.

I happened to really enjoy this type of book and recommend it whole-heartedly to everyone.

**DOCUMENTS SUR MICRO-INFORMATIQUE ET CREATION TEXTILE** (French) by Michel Thomas and Remy Prin © 1983. Published by Textile/Art/Language Centre International d'Art Textile, 3, Felix Faure, 75015, Paris, France. 8 1/4" X 11 3/4" format, 41 collated pages, 40 French francs + 7 FF P/H. ISBN 2 904267 00 1.

This publication deals with the use of the micro-computer by handweavers. The authors, realizing that the encounter between the age-old craft of weaving and the contemporary technology of computers has taken place and will intensify rapidly, have assembled a great deal of information on computers and programs which will aid French weavers who want to be better informed. There is a bibliography of articles and publications which have dealt with computers as aids for recording and designing patterns.

The glossary will enrich the vocabulary of French-speaking weavers. The next chapters discuss programs for textile people, the function of the program, the hardware for which it is designed and the price.

Programs are listed for DAI PC 48K RAM (programs by Prin); Sinclair ZX 81 (programs by Bernard Morille and Henri Lazennec); Apple II (programs by Henri Lazennec).

The authors have included a list of programs available in the U.S. They reprinted a review of "Video Loom II" which was the only information available to them at press time.

Finally, there are some notes on the purchase of a microcomputer and to this end there is a comparative chart showing a long list of microcomputers with their Benchmarks (times in which test programs can be executed), graphic resolution, color capacities, etc.

The publication also includes a list of useful addresses where additional information is available and ends with a few philosophical reflections.

**INITIATION A LA CREATION DENTELLIÈRE** (French) by Colette Van Steyvoort © 1982. Published by Dessain et Tolra, 10 rue Casette, 75006 Paris, France. 7 1/2" X 10" format, 198 pp., hardcover, 45 French francs (approx. \$25.00). ISBN 2 249 27612 9.

This is a study course in creative contemporary bobbin lace. The author who is a master lace-maker and teacher at l'Atelier de dentelles, 6, rue de la Violette, in Brussels, was trained in traditional techniques but is concerned about lace as a medium for the creation of contemporary art.

The book starts out with a brief survey of the history of lace leading up to today when there is a new awareness of the aesthetic potentials of lace. Contemporary lace is based on abstract drawings, new use of colors and materials, new formats which include large wallhangings and three-dimensional sculptural pieces. Students at the Atelier de dentelles need a thorough artistic formation but also a complete mastery of the techniques. This will enable them to create successful pieces which integrate easily into contemporary environments.

The first chapter discusses materials and equipment. They are basically the same as for traditional bobbin lace with some adaptations for working on a larger scale.

The lengthiest chapter is on techniques. The author uses a system of color codes in order to graphically represent the movement of the bobbins. First there is a description of the basic stitches, then the various grounds which are classified according to the type of grid that should be used to pin the pattern down. This section covers all the motifs and pattern elements that are used in contemporary bobbin lace.

To apply all the techniques which have been learned, the author guides the reader into making a sampler in the form of a "patchwork" wall-hanging. Each patch incorporates a different ground and some pattern technique. The ground is worked within a lace frame that has to be executed first. This approach of framing and filling in allows the lacemaker great flexibility of form, material and size which is conducive to creative interpretations.

This book is well illustrated with an abundance of contemporary lace fiber art either by the author or executed under her direction.

The study course is well illustrated and can be followed step by step. It would be helpful to know some French and to have some basic knowledge of bobbin lace to benefit fully from this book but anyone interested in creative lace may want to make the effort to follow this teacher's instructions.

**FRENCH ENGLISH WEAVING GLOSSARY** ©Bibiane April-Proulx, Les editions la Tirelle Enr. 176, des Frênes, Ouest, Québec, G1L 1G5 CANADA. 5 1/2" X 8" format, saddle stitched, 20 pp., \$2.00+.50 P/H

A very useful booklet for anyone needing to translate French weaving literature into English.

**RUGWEAVING: TECHNIQUES FOR TWO-HARNESS** by Joanne Mattera © 1979 Watson-Guptill Publications 1515 Broadway, New York, N.Y. 10036 Hardcover 216 pp. \$25.00 11 1/2" X 8 1/2".

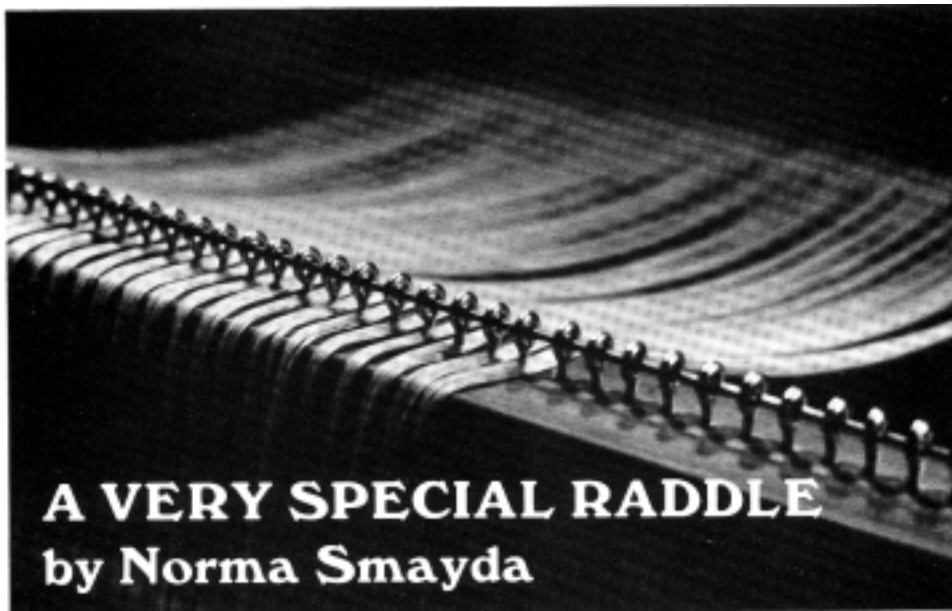
*Rugweaving* is a fine book, slanted toward the beginning weaver. However, there is much for the experienced weaver, too. Such a book can fill in the holes in most weavers' knowledge of the rug making process. The profuse illustrations in black and white of ancient rugs and exciting contemporary ones are outstanding. The ten rugs shown in color are well chosen and should serve as inspiration for any weaver. And weavers will find the bibliography, suppliers list, glossary and index at the back of the book are useful tools.

Joanne Mattera states in the Preface that she wrote the book "not to deny the validity of multi-harness weaving, but to affirm and encourage those who wish to explore or re-examine the potential of the two-harness concept." And this she has done very well.

The book begins with a brief history of rug-making and early techniques, a description of looms and tools used for rug weaving and a good chapter on fibers and yarns. This last chapter contains (p. 64) the best chart of fibers, their properties and characteristics I've seen. Each characteristic and property is described clearly in detail in the text, as well, though the various fibers may be hard to find quickly. The many figures which amplify the text are models of clarity and make the book glow.

The author is very knowledgeable about the weaving of rugs and gives full instructions for the various techniques that can be used. She also includes a chapter on tapestry techniques. The last chapters cover finishing, the solution of problems a weaver might encounter and designing. I found the chapter on designing heavy going and lacking the clarity of the rest of the book. By placing this chapter at the end of the book, she seemed to be indicating that it was of less importance than the subjects that preceded it. Her last paragraph seemed to reinforce this view, for she wrote that designing "is a process of exploration that is based as much on intuition and experimentation as it is on the formalized structure of books."

Mary L. Derr



1. Riddle on cloth beam of 54" loom.

Martha Stanley (see her article in issue #22 of *The Weaver's Journal*) described a very simple and useful device for getting enough, but not too much, weft yarn into each shed when weaving rugs. It is known as a bubbler.

For those of you who missed her article, this is a brief description of how it is made and its use. The bubbler can be as simple as a light piece of wood, cut as long as the beater. Drill pilot holes every 2 inches (5 centimeters) in a straight line, then hammer in finishing nails, nearly through the wood. Hang the bubbler, nails down, in front of the beater using a chain of rubber bands. Adjust the height of the bubbler so that the nails don't interfere with the shuttle passing through the warp, yet so that it can be pulled into the shed close to the fell of the cloth. Throw the shuttle, and place the weft in the shed in a triangle, rather than on the diagonal. Bring the bubbler down into the shed and towards the fell of the cloth. A series of uniform 2 inch (5 centimeter) bubbles are quickly formed. Change your shed and beat. The height of the triangle determines the amount of weft to be bubbled in. Your weft yarns and sett will dictate how much weft you need to cover the warp, i.e. how high to make the triangle. Occasionally 2 triangles work better than 1.

I have had ample opportunity to see the bubbler used by several weavers. The Saunderstown Weaving School has twenty-four looms and a few always have rugs on them. Generally they are *krok-bragd* rugs, reflecting my interest, but currently there is more variety in the rug weaves due to Peter Collingwood's inspiring rug workshop here last fall. My thanks to Martha Stanley for introducing us to the bubbler.

The following is a description of a device as simple and useful as the bubbler. It is a very special riddle which all of the weavers at the school appreciate.

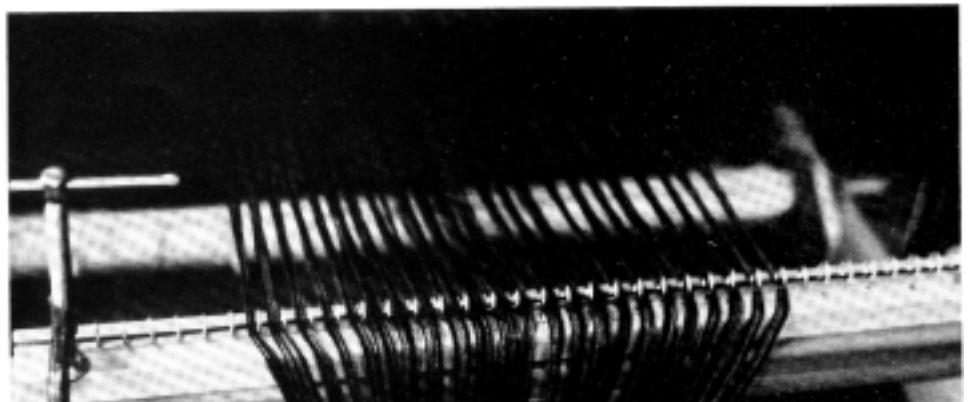
In dressing a loom, I teach the weavers to wind the warp onto the warp beam first, using a riddle which is clamped to the breast beam. After the warp is beamed, it is threaded through heddles and

sleyed through the reed. This technique of dressing the loom is easier on the warp threads because they go through the heddles and reed only once (during weaving, but not during winding on).

Normally, a riddle is made at home from a piece of wood with nails hammered in lengthwise at  $\frac{1}{2}$  inch intervals. A more elegant riddle may be made like a coarse reed, except that the top lifts off, with wooden dowels placed every  $\frac{1}{2}$  inch (or every one centimeter if it is a metric riddle).

The riddles I am now making for the school use screw eyes instead of nails. Cut a 1 x 2 inch board to the length of the breast beam. First mark, then drill pilot holes  $\frac{1}{2}$  inch apart in a line  $\frac{3}{4}$  inch in from one of the long edges. If a drill press is available, clamp a guide to its table to set the  $\frac{3}{4}$  inch distance from the edge. Drill the pilot holes by sliding the riddle board along the guide. The screw eyes will be in line and vertical. For those of you using metric reeds, space the screw eyes one centimeter apart. There is no reason to have screw eyes at the extreme ends of the riddle beyond the weaving width of your loom. Use #12 or #14 screw eyes and screw them into the pilot holes. Make certain the screw eyes are large enough to contain  $\frac{1}{2}$  inch of warp yarns *between them*, yet not so large that they can't be screwed in every  $\frac{1}{2}$  inch (1 centimeter). I add one last screw eye at one end so I can hang it from a hook on the wall.

Next, get a thin metal rod or straightened wire clothes hanger.



2. Riddle on cloth beam of 22' loom.

Bend approximately a one inch loop at one end and cut the wire about one inch longer than the weaving width. If the raddle is over thirty inches consider using two rods, one from each end (Photos 1 and 2).

Because the row of screw eyes is placed off center there is enough room to place the clamps in front of them, rather than blocking the ends of the screw eyes. Mark the center of your raddle with a brass brad and your raddle is ready for your next warp. As you begin to place the warp yarns in the raddle, slide the metal rod in the eyes over them to hold them in place. In winding the warp onto the loom it will not bounce out of the raddle as you pull and shake the warp since the rod keeps it securely in place.

The raddle for my Glimakra loom has a nice touch. It is special only in the way that it fits onto the loom. This loom has a cloth protector. This is a thin piece of wood ( $\frac{3}{8} \times 2\frac{1}{2}$  inch) that slides into grooves in the front uprights and is held just in front of the woven cloth where the cloth winds around the breast beam. This raddle takes advantage of the grooves made for the cloth protector. It is made with a vertical bar that slides into these grooves and a horizontal piece to hold the screw eyes. By using these grooves the raddle does not have to be clamped to the breast beam.

It will take some time to screw in all of the screw eyes needed for this special raddle, especially on a wide one. But it will be well worth it. This special raddle won't catch threads on your sweater or scratch your arm. And you'll be delighted with its usefulness.

**ABOUT THE AUTHOR:** Norma Smayda is head of the Saunderson Weaving School in Saunderson, R.I. The school has been offering weaving lessons since 1974. She learned to weave, and since has taught weaving in Oslo, Norway, and leads weaving study tours to Norway. She has the MFA from Southeastern Massachusetts University. In addition to teaching, she also exhibits and sells her work. She is President of the New England Weavers Seminar and past President of the Weavers' Guild of Rhode Island.



**DOS TEJEDORAS**

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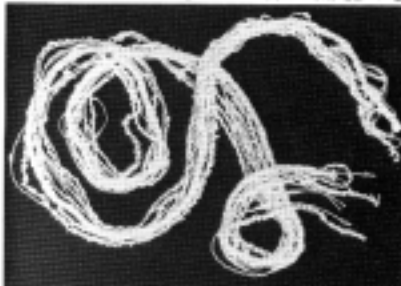
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## FIBRE FACTS

BY BETTE  
HOCHBERG

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## A NEW JOURNAL FOR CREATIVE TEXTILES



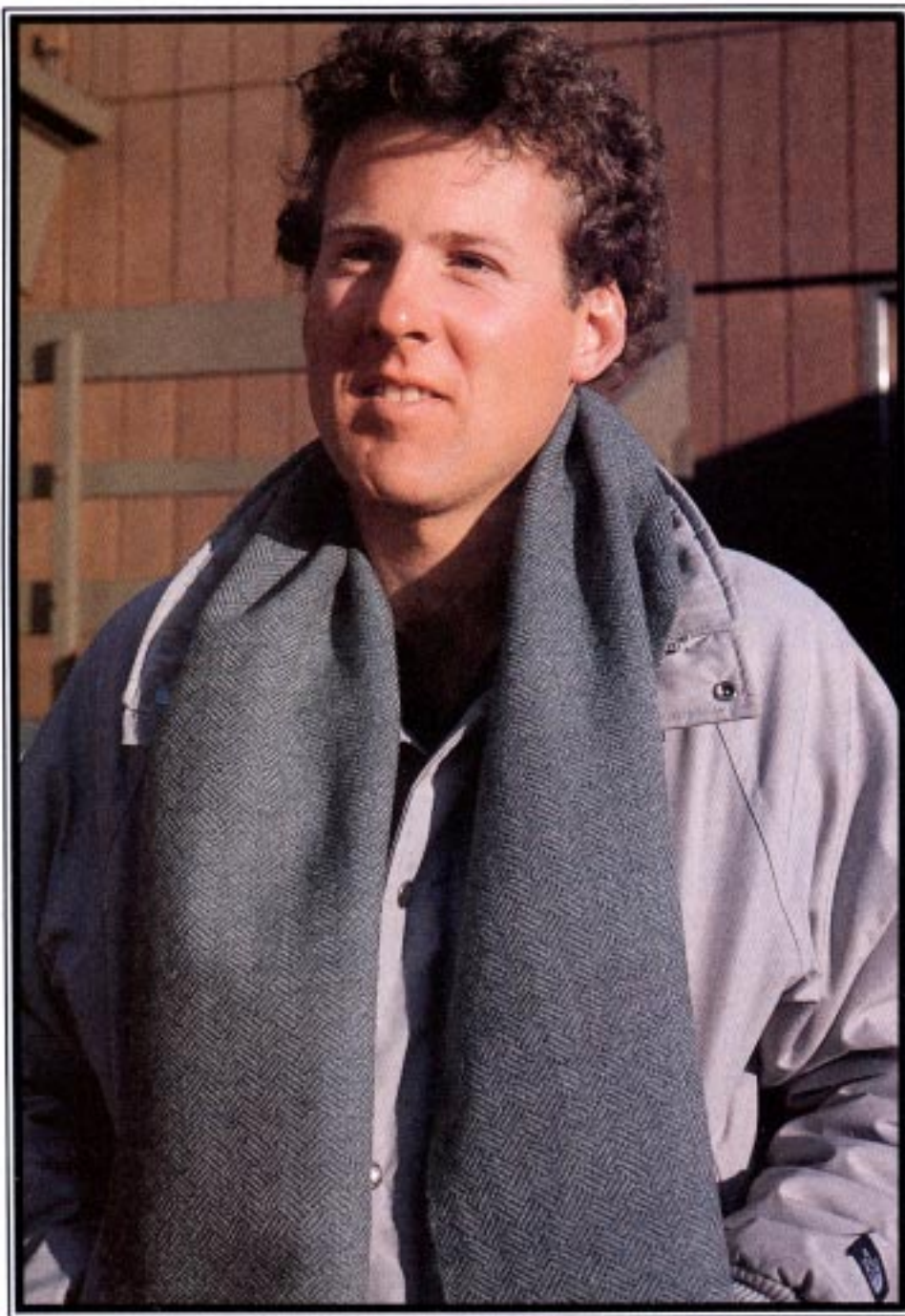
Deutsches  
**textilforum**

Theodore Kunst  
Handgezeichnete Kostüme —  
E. D. Kamm — Gewandstücke  
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Wache Bekleidung auf dem  
Arbeitsmarkt  
Hansel Bucher und  
Veranschauligung  
Aus verschiedenen Textildruckern

In the Federal Republic of Germany an association with a journal is being founded as a forum for all those who are interested in creative textiles. Its members belong to the various fields of textile activities, as there are textile art, design, craft, adult education, teaching in schools, trade with textile art and materials. The development in some of these spheres has grown rather quickly during the last years; the necessity for more information—also from over the German borders—became more and more apparent.

Our main point will be the supply of information and the promotion of contacts and interchanges among persons interested in textile art. Further we wish to reflect on tendencies and enforce trend discussions regarding the development; at last, presentations and portraits of individuals from the textile scene are planned. The DEUTSCHES TEXTIL-FORUM should be a working medium and a "round-about" for references and contacts!

**Textilforum**  
**Postfach 5944**  
**3000 Hannover**  
**West-Germany**



## CASUAL BUT CHIC - A MAN'S SCARF

Weaving a man's scarf seems like an easy project. It is, but it will only be successful if the yarns are soft enough not to irritate the skin and luxurious enough to give a touch of elegance to the complete attire. The colors have to harmonize easily with the latest man's fashions and the patterning has to be distinctively masculine.

By choosing E'lite's Heather #1 yarn, described in Product Reviews p. 71, we were able to weave a truly successful man's scarf, casual but chic.

Note that the amount of yarns given here are adequate for 3 normal (1½ yds) or 2 extra long scarves (2 yds +).

**Warp:** ½ lb. of 2/12 heather wool, light blue-grey (E'lite knitting machine weight, 3360 yds/lb, color #4635).

**Weft:** ½ lb. of 2/12 heather wool, medium blue-grey (E'lite #4625).

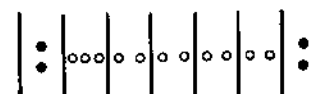
**Length of the warp:** 6 yards.

**Sett:** 20 epi in a 10 dent reed.

**Width in the reed:** 12"

**Total number of warp ends:** 243 plus 4 for floating selvages.

**Selvages:** Use a double thread for floating selvages on each side. Either beam these with the warp or keep them under moderate tension with 4 oz. weights. Sley the double floating selvages in a dent by themselves to avoid friction with other warp threads.



• = floating selvedge

**Weave structure:** 8-shaft, 10 treadle plaited twill (Fig. 1). Note that the weave structure for a 4-shaft loom should be herring-bone twill (Fig. 2).

**Threading, tie-up and treadling:** See Fig. 1 or Fig. 2.

**Finishing:** With a well matching sewing thread and small stitch, machine stitch on top of the first and last weft pick. Wash the scarf in cool water with little agitation until the fabric is lightly full. Cut the fringe down to 1".

Some precautions have to be taken by the weaver. Do not put the floating selvages under too much stress. If too much wear is put on them they will break. Prepare the warp with two crosses, the porrey cross and the portee cross. In the porrey cross each warp thread crosses its neighbor. The portee cross is made with groups of threads corresponding to the width

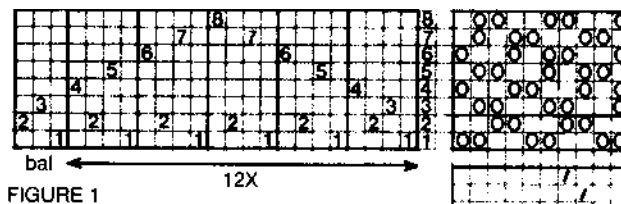


FIGURE 1

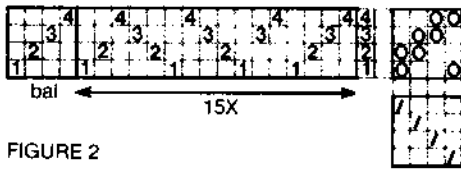
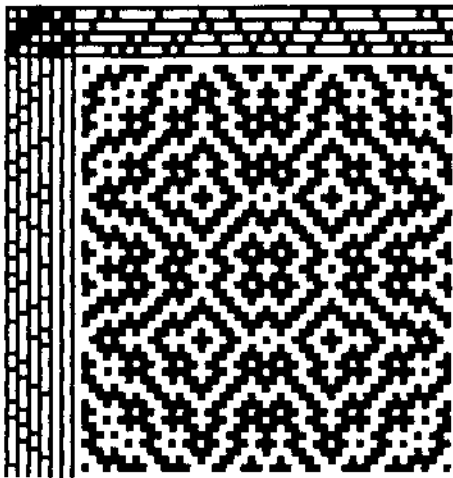


FIGURE 2

of the sections of the raddle. With 1" spacings of the raddle and 20 epi, the portee cross should be made with groups of 20. Start beaming the warp with the end that has the portee cross. Spread the warp in the raddle and beam. There will be no friction nor wear in the warp. When the warp is beamed, put lease sticks in the porrey cross and start threading the ends through the shafts. Sley the warp, tie on and weave. If the warp requires sizing, spray it with spray starch. ■

## PRODUCT REVIEWS



### DRAWDOWN

Drawdown is a program for the Apple II+ personal computer. It requires 48 K of RAM and one disk drive (DOS 3.3), a graphic printer and interface (grappier+ or other compatible interface). The program is available for \$35.00 from Volume 7 Software, 408 N. Bardley, Mt. Pleasant, MI 48858.

The program is designed to make and print drawdowns of weave structures which require up to 8 shafts and up to 10 treadles. The draft displayed on the monitor and which can be printed, includes the tie-up, the threading, the treadling and the weave structure (see example). The threading allows up to 254 warp ends and 72 picks.

The program is the most user-friendly that I have encountered. The instructions for loading the data are very straightforward and basically the same as if the draft were done by hand. All the instructions are in weaver's language rather than in computer language. The draft can be edited at any time by changing the threading, the tie-up, and treadling. The entire draft can be saved on the disk and recalled for display, printing or editing.

The instructions that come with the program are written for the weaver who has little or no knowledge of computers. Bill Stanwick, the programmer is also standing by to help. I had a problem because my printer was not the type

called for in the requirements. Bill was willing to send me a revised program so that it would run with my equipment and as a result I was able to use DRAWDOWN for many of the graphs published in this issue of *The Weaver's Journal*.

Bill Stanwick is also willing to communicate with other programmers who would like to make modifications to DRAWDOWN.

This program is an easy and useful working tool for weavers but is limited to 8 shafts and 10 treadles. It is simple and fast to use and gives clear drawdowns. The drafts are displayed and printed in a form that the weaver is familiar with and are a big help for keeping records. It is an excellent "first program" for those who wish to get into computer aided drafting and designing.

### GLIMÅKRA LOOMS 'n YARNS

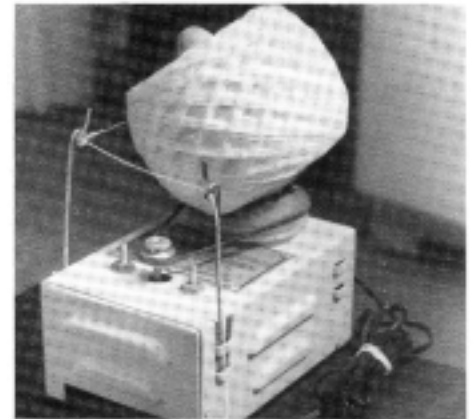
The Borgs wool swatchbook has been reviewed in the Summer 1983 issue of *The Weaver's Journal*. Three pages have been added to the binder. They show 4 beautiful swatches woven with Nokam, Nothars, SNL and Frosta. All are twills and are finished by the Ihana Brushing Service. The brushing changes the looks and the feel of the fabric dramatically. It is a finishing technique will worth exploring.

Glimåkra Looms 'n Yarns also announces the availability of the 1984 Sheep calendar. They can be ordered wholesale by writing to P.O. Box 16157, Rocky River, OH 44116 or P.O. Box 1271, Sonoma, CA 95476. For information on the Ihana Brushing Service, write to 3605 Hartford, St. Louis, MO 63116.

### E'LITE SPECIALTY YARNS, INC.

This company, located at 750 Suffolk St. in Lowell, MA 01854, distributes a wide variety of sumptuous yarns for the weaver and the knitter. After we received a sample card of their Heathers #1 yarns, we couldn't resist proposing to weave a project with them. Heathers #1 comes in 3 weights: 4/12 sportsweight, 1680 yds/lb, put up in skeins or cones; 4/8 worsted weight, 1120 yds/lb, put up in balls or cones; 2/12 knitting machine weight, 3360 yds/lb, put up in cones. The color selection is unusual. In each major color group (burgundy, red, teal blue, forest green, black, khaki) the colored fibers have been blended with various amounts of naturals to give a range of color coordinated heathers.

We chose the finest weight (2/12) to weave a warm but lightweight man's scarf that wouldn't be bulky. The yarn met all our expectations. It is an excellent weaving yarn but the warp may require to be sized (use spray starch). It is hairy but otherwise smooth, lustrous and silky. The woven fabric has a texture normally associated with quality handwoven goods, it is rich and sensuous. For the complete description of the scarf, see p. 70 of this issue.



### GALAXIA ELECTRIC BALL WINDER

The Galaxia ball winder is made in Mexico and is distributed in the U.S. by VILLAGE WEAVERS, 215 Village Circle, San Antonio, TX 78232. The cost is \$59.95 ppd. Inquire about quantity discounts.

The components of this tool come well packaged and are quick to assemble; an accompanying flyer has a good picture that serves as a guide. No tools are needed. Most people would feel happier and more secure if written instructions for the assembly were included, especially those who are totally unfamiliar with ball winders. The distributors will probably make this information available if they realize there is a need for it. An electric motor replaces the crank of a hand winder, but a person still has to be in attendance to produce the right tension on the thread. With too little tension the ball is too loose; with too much tension the rotation stops.

A ball winder is a neat tool to have. Anyone who doesn't like to turn a crank will find that Galaxia is an answer to their problem. ■



## A KIMONO / PANTS ENSEMBLE

by Karen Selk

In January 1983, my cabinet-making friend and I were approached by a local art gallery to produce a two person show for the end of May. I had already woven a few pieces, so this meant weaving five major pieces in four and a half months, as well as carrying on with the rest of my life.

As I gain more experience in weaving I find it very important to spend as much time in the designing stages of my pieces as in the actual weaving. In preparing for this show, I couldn't afford to be inefficient and waste my time fixing mistakes just because I hadn't done enough preparation before I started work.

Included in the major pieces for

this show were two clothing ensembles. The initial ideas for both of these came out of a "loom-shaped clothing" workshop which I took with Anita Mayer at *Convergence* in Seattle. When it comes to clothing I like the idea of the simple lines of loom-shaped garments, but I also like something of a tailored look because it is more flattering to my 5'1" stature. I am by no means a purist with either of these approaches and over the years I have been combining the use of ethnic loom-shaped clothing with patterns from Vogue, McCall's, and so on.

I chose to weave a kimono because I've always loved those beautiful full flowing sleeves, the simple

shapes and the line of the neck band. After some research I decided to work with the *Folkwear Kimono* patterns as my main guide and to change and manipulate from there. I then opted to make a short kimono shirt/jacket, because it would better suit my style. I have discovered over the years of weaving clothing that it is hard to find something just right to go with that smashing top or jacket or skirt I've woven. As a result I've come to the conclusion that I need to think "ensemble", and so decided to weave fabric for pants on the same warp.

I knew I wanted a silk weft—after all this was a kimono. I work for a silk yarn distributor so I had



already been experimenting a lot with silk over the previous year. I like a fabric that is a combination of a silk weft and another fiber in the warp, as it produces a soft drape. I figured my pants would not wrinkle as easily with a wool warp. I therefore chose two different shades of off-white 20/2 wool for the warp.

I have always enjoyed weaving pictorial designs on clothing. This is what I wanted to do on my kimono, using the Moorman Technique.<sup>1</sup> It is perfect for putting design work onto clothing because it isn't stiff and bulky. Yet it is an inlay technique that produces a more solid tapestry-type look than the traditional inlay.

The threading for Moorman is 1,2,3,1,2,4. Two size threads are needed in the warp, a main background thread, my 20/2 wool, and a very fine tie-down thread. While staring at my yarns, my eyes roamed across a beautiful spool of pastel varigated fine silk, like a sewing thread. A friend gave me this treasure a year or so ago. I wondered at the time where I would ever use varigated pink, yellow and green silk. It was just the thing for my tie-down thread. It would add life and a subtle shimmer of color, pleasantly suprising the eye when looking at the kimono background. The 20/2 wool threads were on shafts 1 & 2 and the silk tie-down threads were on shafts 3 & 4.

In Moorman the inlay lays on top of the tabby background. Shafts 1 & 3 are raised and a shot of background tabby, my 20/2 silk, is woven. Then just shaft 3, carrying half of the tie-down threads, is lifted and the inlay weft is placed in the design areas. Shafts 2 & 4 are raised, a shot of tabby background is woven. Shaft 4, carrying the other half of the tie-down threads, is lifted and the inlay weft is placed in the design areas. With this threading and treadling the design threads sit on top of the tabby fabric. In fact, when you look at the back of the fabric there is no sign of the design threads.

Of course, there are various ways to use the weft threads in the design areas. Colours can overlap and run into one another. Design areas can be treated like tapestry, or can have background showing through, and so on and on.

It was now time for my sample warp. I just can not stress sampling enough, especially for clothing where the body, drape and hand are so important for good looking and feeling clothes. Not only did I determine the sett and the hand of the fabric from this sampling but I also tried out color possibilities. It was spring and my landlady had the most beautiful show of pink clematis climbing up her porch railing. I wanted those delicate pink flowers, green leaves and vines decorating my kimono.

With this design in mind, I had to choose my inlay thread. When choosing these it is important to consider technical and aesthetic qualities. Technically, the design threads must be thick enough and lofty enough to cover the background fabric and to stay in place. Aesthetically, color blending is much richer and more interesting than the use of solid colors. After weaving many small squares using different combinations of threads for the inlay areas, I decided that two mercerized cotton and one very fine silk thread, used as one yarn, were perfect for the inlay areas.

My next step was to make a muslin kimono and tape it together to see how I liked the fit. Now I could measure each piece and decide the most efficient way to lay it out on my warp. It will be different for each person, but for my body measurements, the layout in Fig. 1 was most suitable. Of course, I had carefully measured my sample piece before and after washing and I knew I would have a 12% shrinkage so I could plan exactly for the correct width.

When putting design work onto clothing it is important to have it where it will show to its best advantage. First I made a paper drawing and placed my design where I

thought it would be nice. Then I folded my paper kimono at the shoulder so I could see front and back separately. Clothes fold and tuck on our bodies and we don't want to hide our beautiful design work in a fold. I then drew my design onto my muslin and put it on to see if I was pleased about the composition. I have often discovered that my perfect drawing on a smooth, flat small paper cut out was not perfect on a curved body. So I juggle and re-design and place things differently till the design suits the feeling of the garment and the person's body. As usual, after seeing it on the muslin, my final design was different from my original (Fig. 2).

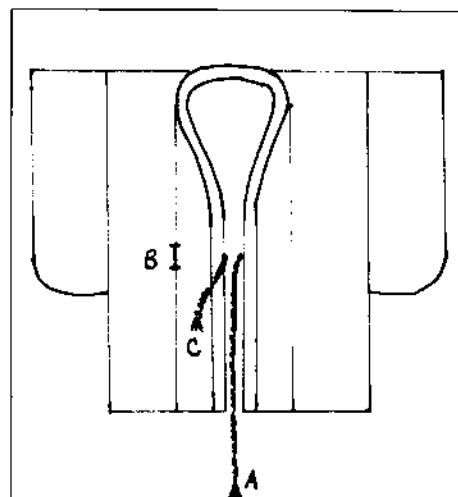


FIGURE 1

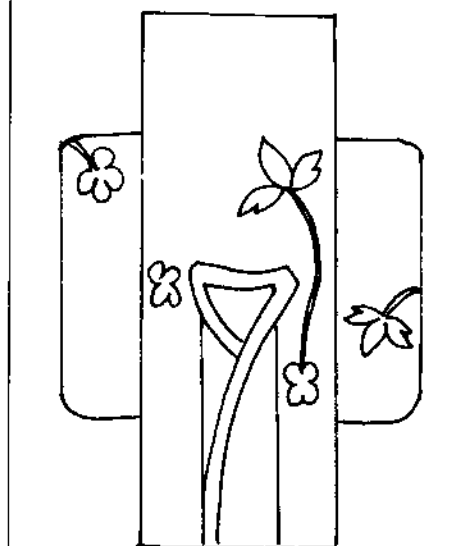


FIGURE 2

Finally after all this planning and designing I was ready to warp the loom and start weaving, with utter confidence that I had chosen the best materials for the piece, that the design suited my garment and that the hand and color were right.

### Warp

**Ground:** 20/2 wool, off-white.

**Tie-down:** fine variegated silk.

**Weft:** 20/2 silk (Treenway Crafts in Victoria, B.C.).

**Length of the Warp:** 9 yards (8.10m). The jacket requires 4 yards (3.6m) of fabric. The pants require 3½ yards (3.15m).

**Sett:** 27 epi (100/10).

**Width in the reed:** approximately 27" (68.6cm).

**Pattern for pants:** commercial Simplicity pattern

I often put my garments together with crochet seams to avoid bulk and to add another design element. But I felt this piece was simple, clean and delicate. I sewed it on the machine, with everything finished carefully by hand so no machine stitching shows.

The original plan for closing the kimono was a silver and ivory pin. This proved to be too heavy for the light weight fabric and too clumsy looking as well. Then I tried snaps

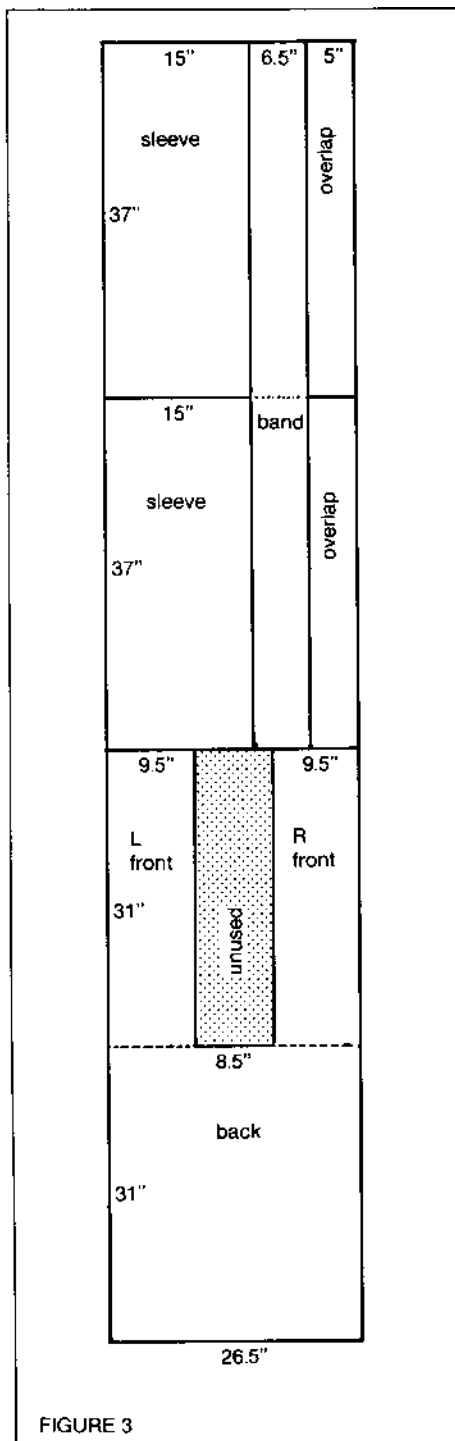


FIGURE 3

but the garment tugged and pulled badly. My friend Cheryl helped me come up with the perfect way to close my kimono. I wanted it to hang as shown in the photograph because I love all the shapes and lines you can see. I made a braid which is attached to the left front band, A, and which slides through a slit, B, on the right front panel and goes around my waist and ties to a braid on the right front band edge, C, inside the kimono (Fig. 1). It is very comfortable, holds my kimono in place perfectly and it drapes with ease.

There are so many things that influence and inspire a weaver along the road to creating a garment. I hope my little kimono story gets across the message of how important it is to put many hours and much thought and sampling into any piece of work. After getting all my "bugs" worked out on paper, muslin and a sample, my kimono wove up and sewed together without a hitch. That is such an incredibly good feeling. Most of us have enough stress to cope with in our lives; we can alleviate some anxiety in our weaving life by taking enough time before-hand to plan our project thoroughly.

### Footnote

It is called Moorman Technique after Theo Moorman, the woman who "invented", or shall I say, brought this technique to the foreground. She has written a beautiful little book expressing her philosophy and giving very detailed, easily understood directions for weaving a sampler trying lots of different ways to use this technique. The book is, *Weaving As an Art Form—A Personal Statement*. Doing the exercises in her book is how I learned to do this technique. ■

## Pendleton

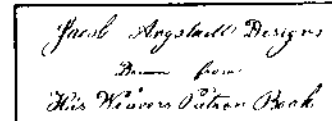
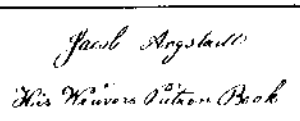
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# COMING EVENTS

Deadline for items in the Summer 1984 issue is May 1.

## COLORADO

**Denver.** Aug. 24-26, 1984. "The Art of Crafts—Festival '84" Denver's first major juried crafts exhibit and sale. Held at the Denver Art Museum, 100 West 14th Ave. Pkwy., Denver, CO. Open to artists working in ceramics, glass, jewelry, wood, leather, paper, metal, fiber, and mixed media. Entries will be juried and prize money awarded. Deadline for applications Mar. 1, 1984. For application forms write: "The Art of Crafts," P.O. Box 38233, Denver, CO 80238.

**Larkspur.** Jun. 2-Jul. 15, 1984. Colorado Renaissance Festival. 16th century European marketplace showcasing outstanding arts, crafts, and entertainment. Fair runs weekends. For information contact Curt Olson, Colorado Renaissance Festivals, Inc., 2660 S. Monaco Pkwy., Denver, CO 80222.

## CONNECTICUT

**Fairfield.** May 11-13, 1984. "Common Threads" biennial show of Handweavers Guild of Connecticut. A juried show, coincident with Dogwood Festival. Contemporary and traditional weavings in antique room settings. Sales area. Tea room. Burr Homestead, 739 Old Post Road, Fairfield, CT. For more information contact: Peg Rasmussen (203) 762-7576.

## ILLINOIS

**Marshall.** Handweavers Guild. Aug. 6, 7, 8, 1984. Workshop by Clotilde Barrett. Laca Weaves Contact Mildred Frasier, 402 No. 8th, Marshall, IL 62441.

**Peoria.** Handweaver's Guild of Peoria. Contact Colleen Zuercher, 39 Audubon Dr., Pekin, IL 61554 April 28, 29, 30, 1984 Workshop by Clotilde Barrett. Subject: Exploring Summer and Winter Weaves.

## INDIANA

**Fort Wayne.** July 7-8, 1984. Three Rivers Festival Arts & Crafts Show. Held at Freimann Park, U.S. 27 & Main Street, Fort Wayne, IN. Open to all original arts and crafts. Fee \$25.00. Deadline May 25, 1984. For application and information send SASE to: Abby Brooks, 3525 S. Wayne, Fort Wayne, IN 46807.

**Indianapolis.** Oct. 9-Nov. 19, 1984 Embroiders' Guild of America's 11th National Biennial Exhibit. Held at Indianapolis Museum of Art, 4403 Radnor Road, Indianapolis, IN. For more information contact: Ann M. Rein, 11th National Biennial Embroiders Guild of America, 4403 Radnor Rd., Indianapolis, IN 46226.

**Indianapolis.** Indianapolis Weavers Guild, 5311 Broadmoor Plaza, Indianapolis, IN 46208 April 4: Program/lecture by Clotilde Barrett on Unusual weaves. April 5, 6, 7, 1984: Workshop by Clotilde Barrett. Subject: Lesser known weave structures.

**New Albany.** Guilds of the Southern Indiana area. Contact Martha Richard, 1419 E. Spring St., New Albany, IN 47150. April 8, 1984: Program/lecture by Clotilde Barrett on Hispano-American Weaving of the Upper Rio Grande Valley. April 9, 10, 11, 1984. Workshop by Clotilde Barrett. Subject: Loom-controlled design.

## MICHIGAN

**Midland.** June 2 - July 15, 1984. Third Michigan League of Handweavers Biennial Fiber Show. Juried show hosted by The Midland Center for the Arts, 1801 West St Andrews St., Midland, MI. For information contact: Cathy Rertz, 4105 Chelsea, Midland, MI 48640.

## MINNESOTA

**St. Paul.** Jun. 3-6, 1984. Midwest Weavers Conference "Byways in Fiber—An Exploration of Ethnic Diversity" held on the campus of St. Catharine's College. Featured guests: Walter Nottingham, Noel Bennett, Anja Mayer, Professor Lyte McNeal. Workshops, Tours, Fashion Show. Exhibits. For more information write Weavers Guild of Minnesota, Midwest '84, 2402 University Ave., St. Paul, MN 55114.

## MISSOURI

**St. Louis.** Handweavers Guild of St. Louis. Contact Lura Jim Bogdanor, 23 Cardigan Dr., Ferguson, MO 63135. April 24, 1984: Program/mini workshop by Clotilde Barrett on long-eyed heddles. April 25, 26, 27, 1984. Workshop by Clotilde Barrett. Subject: Lesser known weave structures

## MONTANA

**Great Falls.** Nov. 5-Dec. 29, 1984. "Centennial Great Falls: A Missouri River Meeting" held at Paris Gibson Square, Great Falls, MT. A juried art exhibition open to current or former Montanans. \$15.00 entry fee for 2 entries juried by slides. Open media. Deadline for slides: June 15, 1984. For entry information contact: Paris Gibson Square, 1400 1st Ave. N., Great Falls, MT 59401.

**Kalispell.** Aug. 24-26, 1984. Montana Association of Weavers & Spinners Annual Conference—"A Medieval Retreat" on Flathead Lake. Hosted by Hockaday Center for the Arts. Deadline for works August 8, 1984. For more information send SASE to: Alpine Weavers, Box 695, Kalispell, MT 59901

**Polson.** June 18-July 31, 1984. Montana Institute of Arts Open Juried Exhibition. Juried by slides. Due by Feb. 10, 1984. Juror: Frederick Wong. All media: two dimensional or low-profile wall pieces only. Fee: \$10.00 for one entry, \$5.00 each additional. Maximum of 4 entries. For prospectus send SASE to: S. Donnelly, R. R. 5366, Great Falls, Mt. 59401.

## NEW JERSEY

**Glassboro.** July 12-14, 1985. The Mid Atlantic Fiber Association is soliciting resumes and class outlines from those interested in teaching mini sessions ranging from 2 to 4 hours. 3rd Mid Atlantic Fiber Conference, Glassboro State College, Glassboro, N.J. Deadline for submission of materials Sept. 1, 1984. Send to: Betsy Dillon, R. D. 2, Box 402, Hockessin, DE 19707.

## NEW MEXICO

**Las Cruces.** Apr. 27-29, 1984. 2nd Annual Arts and Crafts Fair. Held at Corbett Center, Campus Union Building, New Mexico State University, Las Cruces, NM 88003.

**Los Alamos.** 1984 and 1985. "Mountains and Clouds", a traveling juried exhibit of Fiber Art, sponsored by the Intermountain Weavers Conference. For information regarding this exhibition contact: Rex Gulbranson, Visual Arts Coordinator, Arizona Commission on the Arts, 2024 North 7th St., Suite 201, Phoenix, AZ 85006; or Dan Burke, Visual Arts Coordinator, Utah Arts Council, 617 E. South Temple, Salt Lake City, UT 84102.

## NEW YORK

**Buffalo.** October 20, 1984. "Art to Wear Fashion Show" coordinated by Cohen Gallery, Denver, CO and held at Albright-Knox Museum Gallery, Buffalo, NY. Open to fiber/fabric artists nationwide. Juried by maximum 10 slides, resume, artistic statement. Due May 1. For information SASE to: Cathy Cohen, Cohen Gallery, 665 South Pearl, Denver, CO 80209. 303/778-6427

**Rochester.** Apr. 26-May 11, 1984. "Fibers: Yesterday, Today, Tomorrow," sponsored by Weavers' Guild of Rochester, NY. Held at Ward Gallery of Sibley's Department Store, Main Street, Rochester, NY. Members' juried show, demonstrations, educational corner, fashion show, and sale. For more information write: Mrs. Peter S. Clark, 90 Camberley Pl., Penfield, NY 14526.

## OREGON

**Eugene.** Apr. 20-May 10, 1984. "Oregon Invitational Tapestry Exhibit" at Lane Community College Art Gallery, 4000 East 30th Avenue. For more information contact: Roger McAlister, Dept. Chairman, Art and Applied Design Dept., Lane Community College, 4000 East 30th Ave., Eugene, OR 97405

## TENNESSEE

**Gallatinburg.** Oct. 12-Dec. 8, 1984. "The Garden, New Form, New Function" National juried exhibition sponsored by Arrowmont School. The focus is to explore a variety of concepts related to the garden. Artists working in any medium are invited to enter. Slide entries due Aug. 10. Juror is Margaret Ford. For more information and a prospectus contact: Arrowmont, Box 567, Gallatinburg, TN 37738.

**Memphis.** Oct. 4-25, 1984. Fourth Biennial "Path of the Weaver" exhibit. Memphis Academy of Arts Gallery, Memphis, TN. Exhibit is sponsored by the Memphis Guild of Handloom Weavers in cooperation with Memphis Academy of Arts. Juried by Naomi Whiting Towner. For information write: Helen Cline, 237 North Avalon St., Memphis, TN 38112

**Smithville.** Nov. 11-Dec. 24, 1984. Fabric Art: A Synthesis of Designer and Craftsman. The Appalachian Center for Crafts is sponsoring a national juried competition of apparel fabric including knitted, woven, or surface design yardage from 3 to 25 yards. After showing on above dates, it will travel nationwide during 1985. Application fee, and work due Sept. 21, 1984. For prospectus write: Ms. JoEl Loguidice, Project Director, Appalachian Center for Crafts, Route 3, Box 347 A-1, Smithville, TN 37166.

## TEXAS

**Dallas.** June 20-24, 1984. Convergence '84. The Biennial Conference of Handweavers Guild of America will be held June 20-24, 1984 in Dallas, TX. Workshop sessions are planned 3 days preceding the conference and 5 days immediately following. For information contact: Handweavers Guild of America, 65 La Salle Rd., West Hartford, CT 06107.

## VERMONT

**Middlebury.** May 12-June 16, 1984. Handwoven Clothing Exhibition. Held at Vermont State Craft Center at Frog Hollow, Middlebury, VT. Work by Vermont weavers. Guest curator Mary Lynn O'Shea, will also exhibit her work. For more information write: Vermont State Craft Center at Frog Hollow, Middlebury, VT 05783.

## VIRGINIA

**Alexandria.** Jun. 3, 1984. "40th Anniversary Festival" An exhibition of handwoven and handspun articles by the Potomac Craftsmen Guild of Washington, D.C. Green Spring Farm Park, 4601 Green Spring Rd. 12-4 p.m.

## WASHINGTON

**Port Townsend.** May 3-6, 1984. "Fibeworks, 7th Annual Show" sponsored by Peninsula Weaver's Guild of Port Townsend, WA. Held at The Marine Pope Building in Port Townsend. Open to entrants from Mason, Jefferson, Clallam, and Kitsap Counties. Write to: Kathy Bradford, Fibeworks, Box 344, Port Townsend, WA 98368.

## WISCONSIN

**Mineral Point.** July 11-13, 1984. Second Annual Conference on the Creation of Complex Weave Structures. The conference will accept papers related to historic or ethnic woven structures, innovative manipulation of weave structures, application of computers or innovative technology to any aspect of textiles. Abstracts of papers due by May 10, 1984. Sponsored by Charles Babbage Research Centre, St. Pierre, Manitoba. Held at The Looms, Shake Rag Street, Mineral Point, WI 53565. For information write to: Ken Colwell, The Looms Shake Rag Street, Mineral Point, WI 53565 or Janet A. Hoskins, Dept. of Clothing and Textiles, University of Manitoba, Winnipeg, Manitoba, R3T 2N2.

**Sheboygan.** July 21-22, 1984. Fourteenth Annual Outdoor Arts Festival. On grounds and areas adjacent to the John Michael Kohler Arts Center in downtown Sheboygan. Fine arts and crafts. Juried. Deadline: April 15, 1984. Exhibitions, workshops, live entertainment. Write: John Michael Kohler Arts Center, 608 New York Ave., Sheboygan, WI 53081.

**Whitewater.** Jul. 15 - Aug. 3, 1984. "A Celebration of Creativity - fiber and textile exhibit", sponsored by the Whitewater and Spinners and Weavers Guild. Held in the Crossman Gallery on the University of Wisconsin-Whitewater campus. Whitewater, WI. Entry deadline June 20, 1984. For information contact: Sara J. Woods, Rt. 2, Box 144, Whitewater, WI 53190.

## WYOMING

**Cody.** June 15-17, 1984. "Frontier Festival" on the grounds of Buffalo Bill Historical Center. Sales and demonstrations of western crafts, trades and skills. Submit by May 15, 1984. Entry fee \$20.00. For more information contact: Sheila Andren, Frontier Festival, P.O. Box 1000, Cody, WY 82414.

## CANADA

**Calgary, Alberta.** Studio of Bryn Pinchin, P.O. Box 267, Bragg Creek, Alberta T0L 0K0. May 8, 9, 10, 1984. Workshop by Clotilde Barrett: Unusual Weaves

**Red Deer, Alberta.** Handweavers, Spinners and Dyers of Alberta. May 5, 1984. Mini-sessions by Clotilde Barrett on the use of long-eyed heddles. May 5, 1984. Evening program by Clotilde Barrett: Pattern Weaving.

**Prince George, British Columbia.** Oct. 1-27, 1984. The Prince George Weavers and Spinners Guild is organizing a juried fabric exhibition to be held in conjunction with their 10th Anniversary Celebration Conference. All weavers are eligible to enter. We especially hope ex-members will send work to share. The exhibition will be installed at the Prince George Art Gallery. For more information and entry forms send SASE to: "Webs", c/o P. G. Weavers and Spinners, 2880 15th Ave., Prince George, B.C., Canada V2M 1T1.

**Halliburton, Ontario.** Halliburton School of Fine Arts, 339 Halliburton, Ontario K0M 1S0. July 9-13, 1984. Workshop by Clotilde Barrett Exploring Summer and Winter July 16-20, 1984. Workshop by Clotilde Barrett: Shadow Weave.

**Lachine, Quebec.** May 25, 26, 1984. Annual conference of the Association of Quebec Weavers. Topic: Chilkat blankets. Guest speaker: Cheryl Samuel. Workshops following conference. For more information contact: Christiane Lafontaine, 236 10th Ave., Lachine, Quebec H8S 3E5.

**Montreal, Quebec.** Montreal and vicinity. Workshop tour by Clotilde Barrett from Oct. 8 thru 27, 1984. Workshop sponsored by Atelier Bon-Secours, Montreal; by the Weavers of Boucherville, by the Guilde de Lachine, by the Lakeshore Weaver's Guild and by Les Tisserins de Laval

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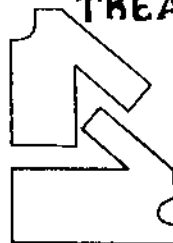
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