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Pattern Drafting by Formula

by JOSEPHINE E. ESTES

For the average weaver, much of the joy in using a new pattern is in getting as much variety as possible from the one threading. But sometimes, much effort, material and time are used up in more or less random trials before a certain desired effect is secured. Perhaps the weaver sees a threading draft and an illustration of the finished design made from that draft, but with no treadling directions given. Or, it may be that illustration and treadling for only one design are given and he wishes to make another design.

The object of this article is to give, in definite, concise form, the fundamental processes for making at least three designs from one pattern, each design being a true all-over; that is, a design that reads the same, in the matter of detail, both vertically and horizontally. Such a design squares up so that there are the same number of pattern shots in one repeat that there are of warp ends in the threading draft used.

General directions for the various all-over designs are given in the shape of formulas which can be applied to any overshot pattern on four harnesses; also to four-block patterns in Summer and Winter Weave for six harnesses.

For the sake of clarity, the following terms, as used in this article, are defined:—

Pattern—the arrangement of warp threads as they are drawn through the heddles.

Design—that effect that is produced by certain use of the pattern.

Group—a number of threads (or squares) arranged on the harnesses so that, by the operation of the loom (or the development of the draft), an overshot is made with the weft thread (or the pencil).

Block—a figure made by using two or more groups.

To bring down—to fill in, on the line or shot being developed, every square on a harness that is represented in the group being worked out.

As drafts are usually read and used from right to left, the drafting in these illustrations is done in that way. If one prefers to work from left to right, it does not matter. The diagonal seen in drafts by Formula A will appear, but will be in a slightly different position.

The numbers used in naming the groups are those of the harnesses which carry the lower threads when the shed is open, allowing for the pattern thread to show in the web what the pencil does on the paper. Each weaver will understand what operation of treadles or levers in his particular loom will secure this result, and can work accordingly.

All patterns used in this article are taken from *The Shuttle-craft Book of American Hand-weaving*, by Mary M. Atwater. Pages are given.

FORMULA A—for drafting as drawn in.

1st step—Select the group to be developed. (The group at the right-hand end of the draft is usually taken as the first one.) Draw a circle around it.

2nd step—Bring down every square on a harness that is represented in the group being worked out. This will give one pattern shot way across the paper under the draft.

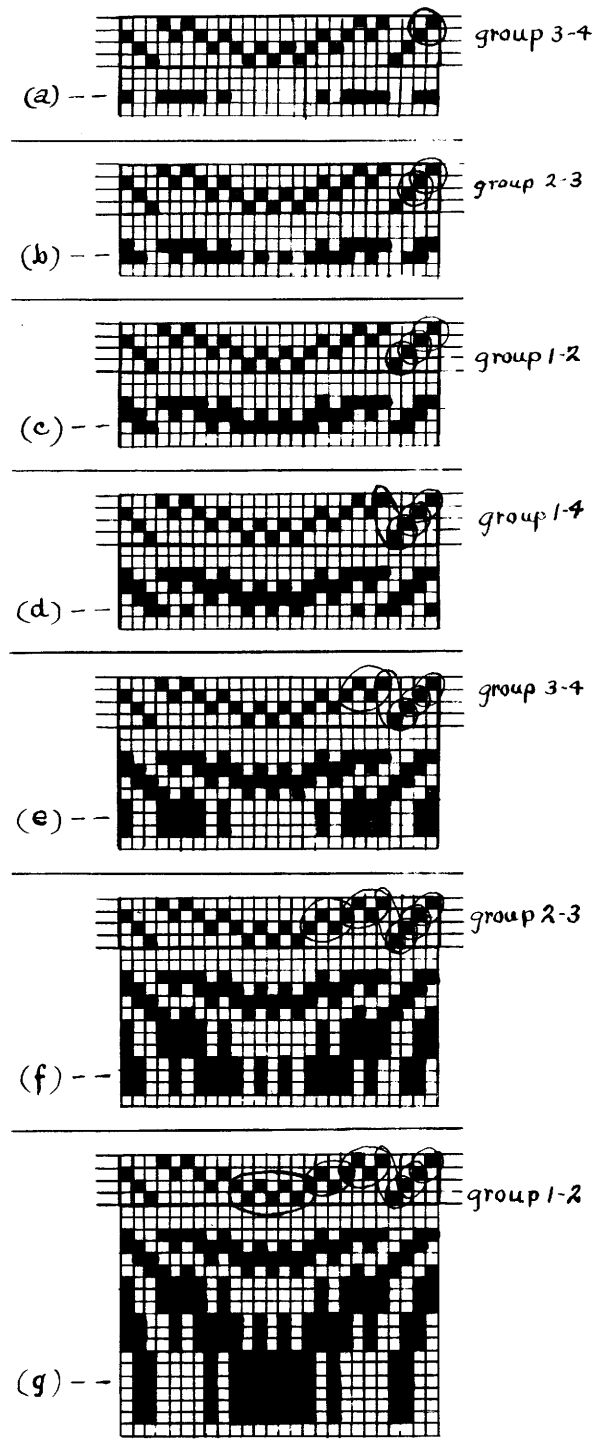


Illustration No. 1
Detail of Drafting

3rd step—Find the number of threads (or squares) in the group and subtract one, leaving a remainder to be used in the 4th step.

4th step—Make the pattern shot way across under the draft as many times as this remainder indicates.

Work out the groups thus in their order, working from right to left.

Illustration No. 1 shows Honeysuckle Pattern, p. 158, no. 6, in the various steps of development, as follows:—

Copy the pattern draft at the top of the paper.

The first group is 3-4 (at right-hand end). Draw a circle around it. Bring down all 3's and all 4's. As there are 2 threads in the group, the 3rd step of the formula indicates that this group will be done only once. Your work should now look as at (a) in the illustration.

Bring down the 2nd, 3rd and 4th groups in the same way, as shown at (b), (c) and (d) respectively.

Draw a circle around the next group. This consists of 4 threads, so circle must include all 4. The 3rd step of the formula leaves a remainder of 3, so this shot will be done 3 times. Do not, at this point, confuse this 3-4 group with the first 3-4 group. You are done with that first one. Confine your work to the last circle you drew, even though the shot passes way across the draft including that first 3-4 with the rest. Your work should now look as at (e).

Develop section (f) the same as you did (e).

The next group has 7 squares, so this shot will be done 6 times, making your work look as at (g).

Continue thus until the draft is completed. Then, it is well to set down the treading draft, if it has not been done as the work progressed. It can be placed at the edge of the draft or written in column form as is shown with Formula B. The entire draft by Formula A is shown in Illustration No. 2, at (a).

After one draft has been completed by this formula and the method is well understood, a new pattern may be selected, and the treading draft can be made directly from the threading draft.

Attention should be given, at some time, to the diagonal that appears in this draft. One person may like to make the diagonal first, then work along it. Another may use it as a test, to check on the work done strictly by the formula.

(Note)—In two-block patterns on opposites (such as Monk's Belt), there is no overlapping of the groups, so no subtracting is done in the 3rd step of the formula. The number of times a shot is done is the same as the number of threads in the group.

FORMULA B—for drafting in rose fashion.

1st step—Write out the treading draft by Formula A.

2nd step—Divide the draft into blocks. To do this, select the most prominent *center* group and the group that comes on either side of it. These two groups form a block.

3rd step—Interchange the two groups composing the block, not only for the block, but wherever they appear in the draft. Then, interchange the two groups that are left. Keep the number of shots the same as before. This will give the treading draft for rose fashion.

4th step—Draft the design from this treading draft.

For example:—compare these treading drafts for Honeysuckle.

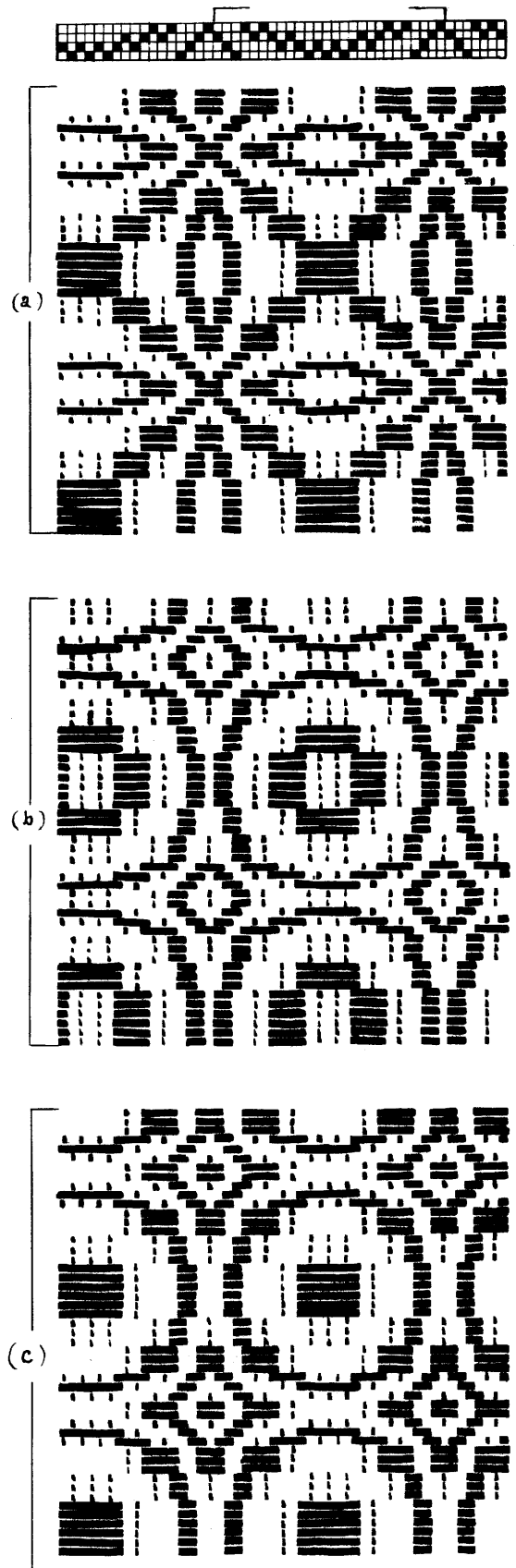


Illustration No. 2
Honeysuckle
by Formulas A, B and C.

Times	Formula A Harnesses	Formula B Harnesses
1	3-4	1-4
1	2-3	1-2
1	1-2	2-3
1	1-4	3-4
3	3-4	1-4
3	2-3	2-3
6	1-2	1-2
3	2-3	1-2
3	3-4	3-4
1	1-4	1-4
1	1-2	2-3
1	2-3	1-2
1	3-4	1-4
<hr/>		
26		

The draft developed by Formula B shows at (b) in Illustration No. 2.

There is no point in applying Formula B to patterns that consist of two block on opposites, nor to alternating patterns (such as Star of Bethlehem or Wheel of Fortune). The result would be practically the same as the reverse side of the draft by Formula A.

FORMULA C—for a second form of rose fashion.

1st and 2nd steps—as in Formula B.

3rd step—Keep one group of the block the same as before. Keep its opposite the same as before. Interchange the two groups that are left. Keep the number of shots the same as before. This will give the treading draft for the second form of rose fashion.

4th step—as in Formula B.

For example:—compare these treading drafts for Honey-suckle:—

Times	Formula A Harnesses		Formula C Harnesses
1	3-4		3-4
1	2-3		1-4
1	1-2		1-2
1	1-4		2-3
3	3-4		3-4
3	2-3		1-4
block 6	1-2	-keep-	1-2
3	2-3		1-4
3	3-4	-keep-	3-4
1	1-4		2-3
1	1-2		1-2
1	2-3		1-4
1	3-4		3-4
<hr/>			
26			

The draft developed by Formula C shows at (c) in Illustration No. 2.

It is curious to find that if Formula C is applied to an alternating pattern (one in which successive repeats of one figure occur on the diagonal), the result is a design having two figures, one the reverse of the other, and neither one following the diagonal. Such a draft, developed by Formula C, is shown in Illustration No. 3. This pattern is on p. 167, no. 34, where it is illustrated (a) as drafted by Formula A.

FORMULA D

This formula is for use with patterns that are partly on opposites (especially those with a large table on opposites)

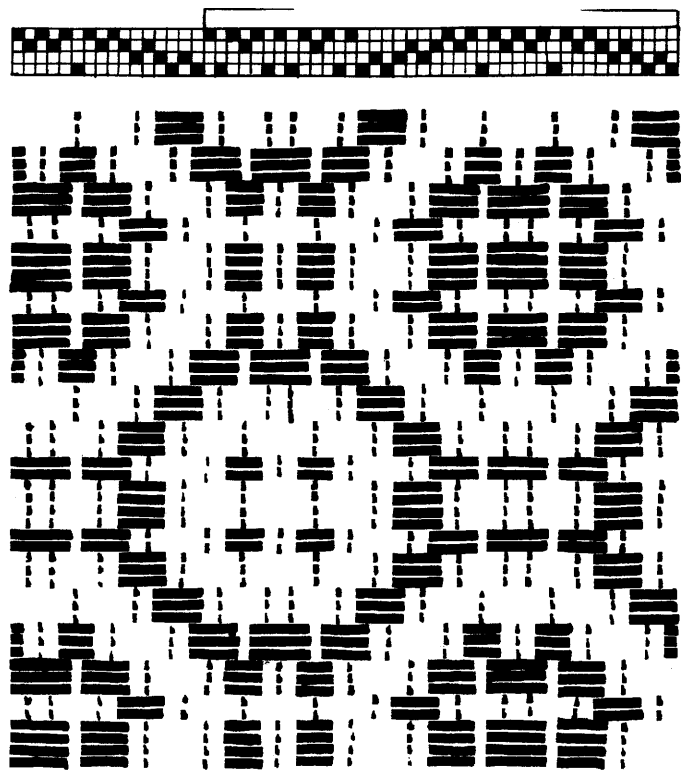


Illustration No. 3
Solomon's Delight, by Formula C.

to secure the rose fashion between the tables.

1st and 2nd steps—as in Formula B.

3rd step—Keep the table or block as it is, and keep the groups that form the table wherever they appear in the rest of the draft. This leaves two groups. Interchange them. Keep the number of shots the same as before. This will give the treading draft for rose fashion on such a pattern.

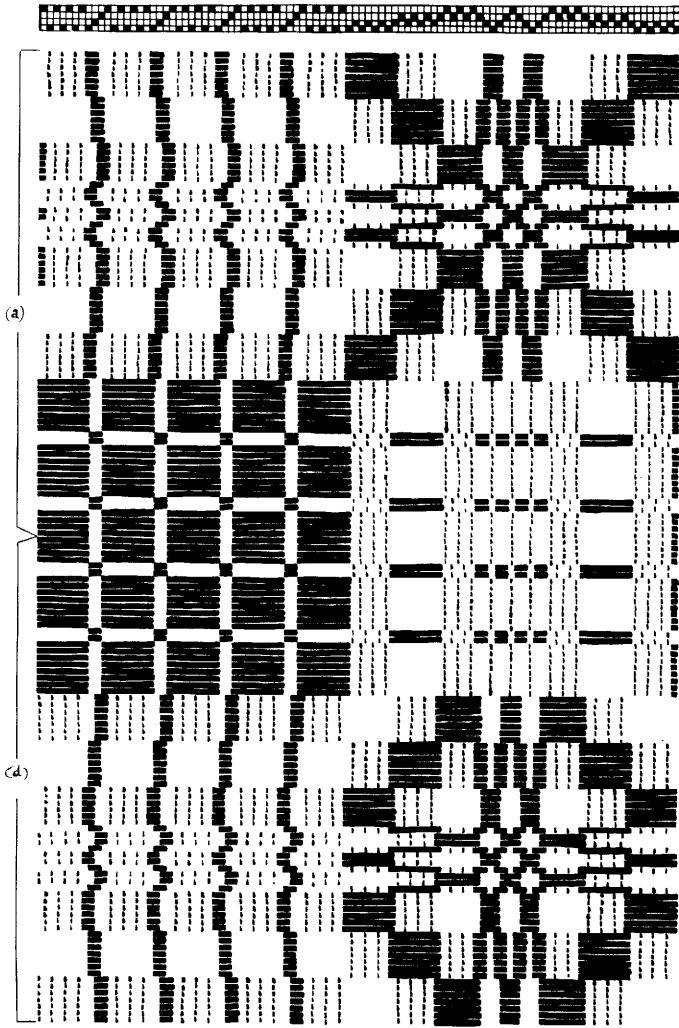
4th step—as in Formula B.

Illustration No. 4 shows such a pattern, The Morning Glory, p. 172, no. 59, by Formula A at (a) and by Formula D at (d).

SUMMER AND WINTER WEAVE

In applying these formulas to four-block patterns on six harnesses in Summer and Winter Weave, the short form of draft shown at (f) on p. 147, is the form to work from. Here, each square represents four threads, and is to be treated the same as a group in the common overshot draft. Since these squares do not overlap, there will be no subtracting in the 3rd step of Formula A. (See note under Formula A.) Otherwise, Formulas A, B & C are used as before.

Illustration No. 5 shows the application of Formulas A, B & C to the Wheel and Star Pattern, p. 225, no. 195. Here, the resulting drafts can be used as foundations for more elaborate designs if desired. In the Summer and



Morning Glory, Illustration No. 4
by Formulas A and D.

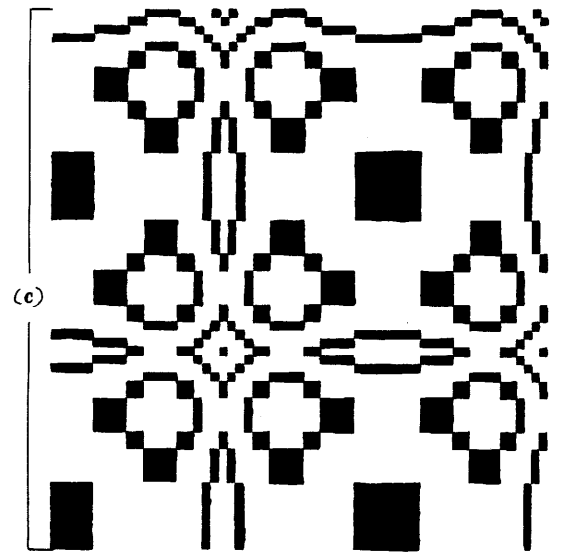
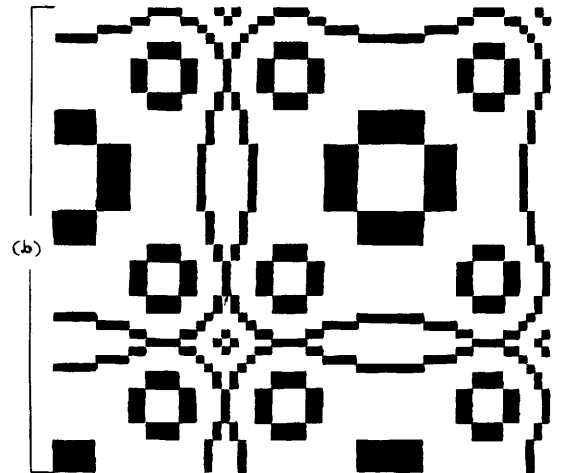
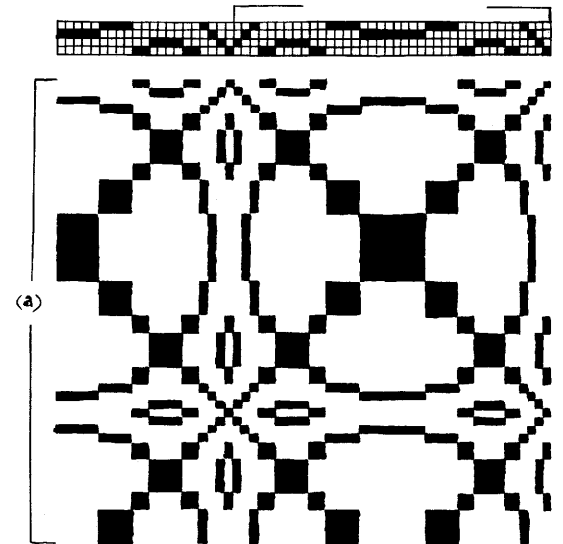


Illustration No. 5
A Summer and Winter Pattern
by Formulas A, B and C.

Winter Weave, it is quite customary to use more than one pattern harness at a time, at certain points in the pattern, thereby adding to the richness of the design. For instance, the draft made by Formula A, while a very definite and well-balanced design, is rather thin-looking. It can be improved by using both pattern harnesses 1 and 3 wherever either one is given in the draft. The design resulting from Formula C can be made slightly heavier by using pattern harnesses 2 and 4 wherever 4 is given. Further weight can be given by using both 1 and 3 wherever either one occurs. It is very interesting to work up a complete design in this weave by using one's own choice as to combinations of harnesses. In all these drafts, the numbers naming the groups refer to the harnesses. When it comes to the weaving in Summer and Winter, the use of more than one harness at a time can best be governed in the tie-up, each weaver knowing best the most satisfactory method for his own loom.

"Where did you learn to weave?"

by W. CLYDE DUNBAR

"Where did you learn to weave?" This question has been asked of me so many times and by so many different classes of people that it has occurred to me it might be of interest to a number of persons who would like to weave, either as a hobby or as a profession, but who are, perhaps, already employed in some way and have only a limited amount of time at their disposal or who may be far from a city where adequate instruction may be had.

This very nearly approached my own position. I was Postmaster in a small country town and had held the position for a good many years. Such work is interesting but not very exciting and I began to feel the need of some radical diversion. Previous to this I had lived in a large city and while working spent much extra time studying music and art. Business and family interests made it seem necessary for me to leave the city and come to the small town that was home.

As I began my search for something that would adequately supply the need to create beauty as well as usefulness I came across an advertisement which said the art of hand-weaving was being successfully taught by correspondence. It didn't seem at all reasonable to me. Of course at this time I knew absolutely nothing of weaving in any form nor had I ever seen a modern loom. To be sure I had in my possession two very old hand-woven coverlets that had been made by my great-grandmother in New York state about 1818, pioneered to Ohio and later to Wisconsin several years before the Civil War. These were simply blankets to me and I had no idea how they were made.

However I wrote a card and in due time I received a letter and booklet on the art of weaving. After a careful study of it I came to the conclusion it was not for me and I would have to be on the lookout for something less complicated. The subject was brought to my attention at various subsequent times by other letters and my interest and curiosity grew to such an extent that I ordered the lessons and a loom. The loom I chose was a large eight-harness, ten treadle, floor type affair.

At the first sight of that loom when it finally arrived I was reminded very forcibly of the old saying, "A fool and his money—." For the crate of framed pieces of lumber was far from being the loom my fancy had pictured. Well, puzzles always did have a certain fascination so I proceeded to put this one together. With the sheet of instructions in constant view that structure gradually assumed shape and not a piece was left over.

I don't now recall how long this took but it required the spare time of several evenings.

My waking hours and not infrequently my dreams echoed and re-echoed the unfamiliar words: breast beam, reed, batten, harness, heddles, lamms, treadles, back beam, warp beam and cloth beam.

At this time I hung only four harnesses, which looked quite formidable enough to me.

Now came the process of putting on a warp which I found was not such an undertaking if the printed instructions were carefully followed. A rather narrow warp was put on first and this was of fine material. A spool rack was provided with the loom and this would hold sixty spools. The fine cotton warp was wound on paper spools so it was not all confusing to place the spools on the rack and to warp section by section for the required width. This as I recall was about eighteen inches.

It seemed the whole thing became more difficult or at least more exacting with each step.

The threading of all those fine ends into what should eventually produce a pattern looked a complicated business and it proved to be all of that.

I checked each repeat of the draft as I threaded the pattern to guard against mistakes as this was all new and I was literally working in the dark. In my opinion this matter of checking should never be neglected for it may obviate much trouble later when the weaving begins.

Here was the first and only place I disregarded the instructions. I took up a position at the back of the loom where the warp came up over the back beam right under my hands and did all my threading from there. It is a simple matter to remember that harness number four is nearest you and then number three, number two and number one in that rotation.

I received rather questionable encouragement from my family during this period. Luckily for their peace of mind as well as my own I had a separate studio where I was alone during these working sprees. They would occasionally wander in, look on in silent sympathy for a time, and then as silently steal away as if to say, "I hope something comes of all the effort you are putting forth but I know there never will."

After this came the "Sleying" and the "tyeing-in" and I was ready for the great adventure. And surely no pioneer in any field could have experienced a greater thrill than I did when I saw my first woven fabric, simple as it was.

If I were to select what to me was the most difficult part of the course I think it would be the proving of the various drafts or "weaving on paper". This was a blank wall for many days and then, as any difficult problem has a way of doing, it all at once became perfectly clear and I had no further trouble with that. Of course I was allowed to ask as many questions and get as much help as was needed if all was not clear but I thought it was more apt to stick if I worked it out alone from the instructions.

As each assignment was completed it was mailed in and comments and corrections were carefully made.

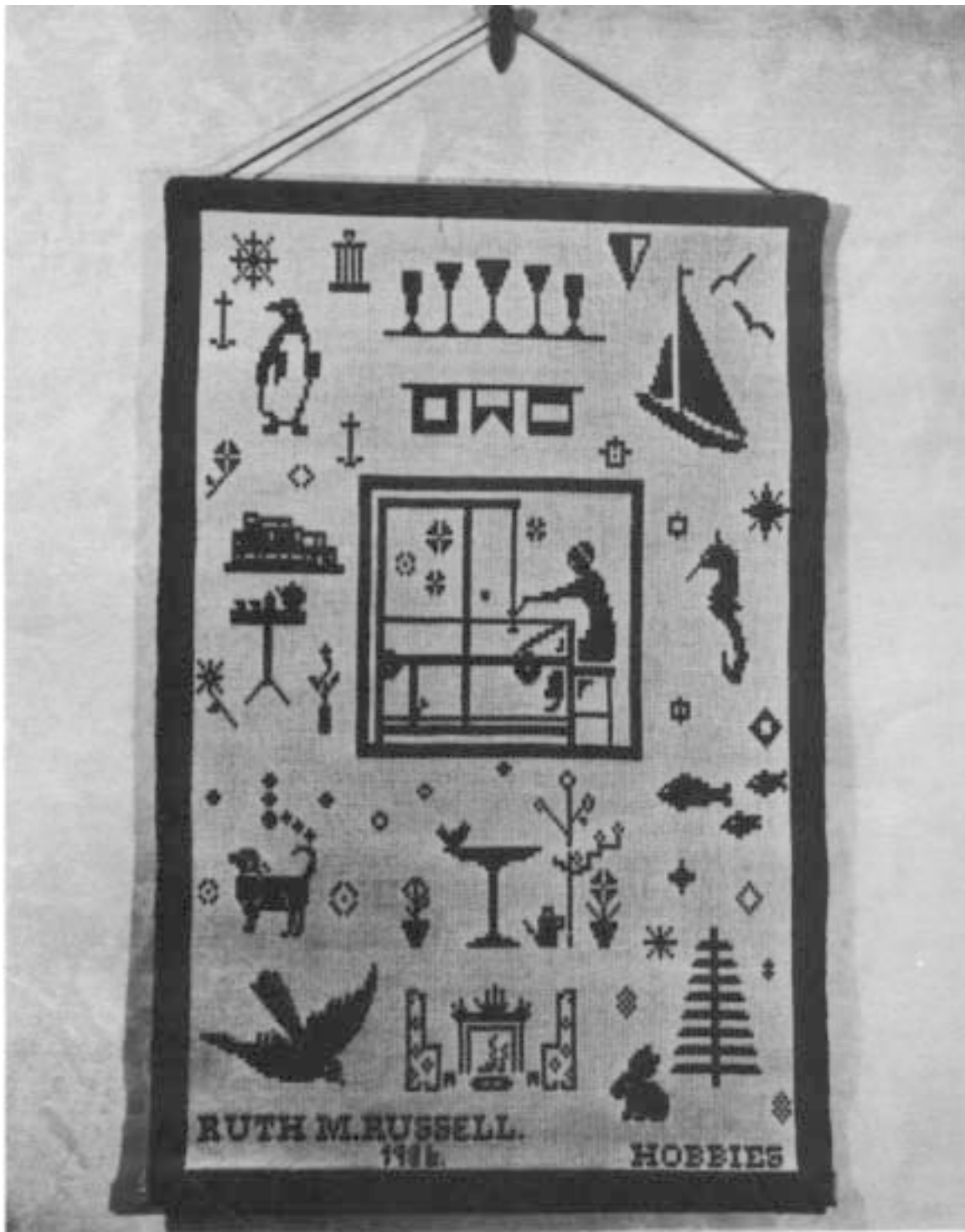
So the work went on through all the old weaves—"Summer and Winter", Bronson, Three-harness, linen, all wool, twills and many others.

I have never received any instructions in weaving from any source other than this and teachers of weaving from many parts of the country, artists, collectors and others comment on the great variety and beauty of the woven textiles they see here and wonder where I find the time to do such an amount of work.

I have also exhibited many pieces at the Society of Arts and Crafts at Boston, the Wisconsin Society of Applied Arts at Milwaukee Art Institute, Marshall Field & Co., Chicago, Stout Institute at Menomonie, Wisconsin, Department of Related Arts in Home Economics, University of Wisconsin at Madison, Wisconsin, and many private Clubs and Societies.

All of my time is now occupied with this work and I find that my interest increases as time goes on and the field of research broadens to include other countries as well as our own.

I would not for a moment have it inferred from these notes that I think I know all there is to learn about weaving. I simply have a firm foundation on which to work out my own ideas and to experiment with the knowledge others have gained before me.



A word as to equipment for weaving. This need not be elaborate or very costly but a well constructed loom that will withstand hard usage is necessary and the careful hanging and adjustment of harnesses and treadles is essential for easy and rapid work. There are many different types of loom on the market and the selection is largely a matter of personal preference. Many of the very old looms can be reconditioned to do good work by the addition of a sectional warp beam, treadles and harnesses for pattern weaving.

A rule I have always followed is never to sell or give away

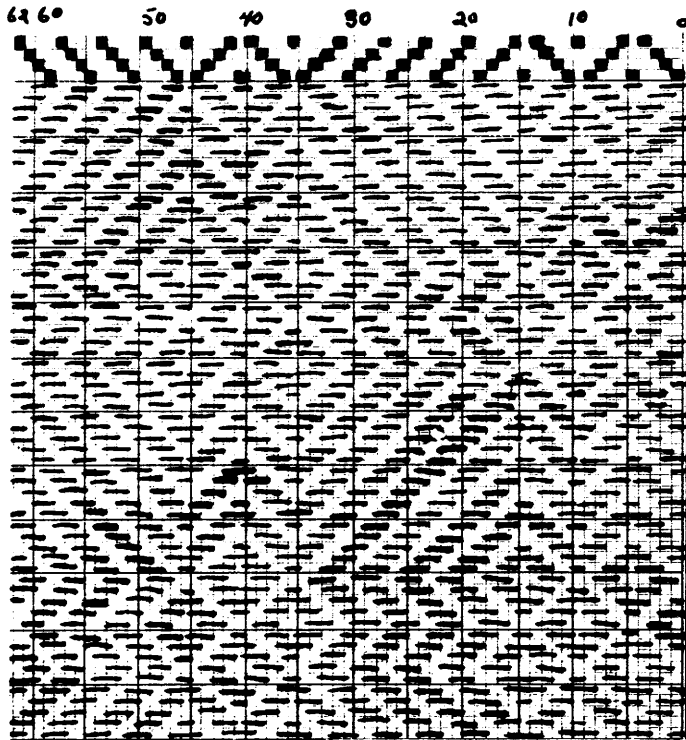
a faulty piece of weaving. Keep it for a sample, as these are of great value to the weaver and should be carefully preserved in usable form with notes for ready reference. I let many an interesting sample piece go before I fully realized the importance of such a collection.

If a person must work alone and depend entirely upon his own creative ability the thing can be done very pleasantly and entirely adequately by correspondence.

My thanks and gratitude to the pioneers in this field of instruction.

DRAFT NO. IV.

Designed by Mrs. Evelyn Lauer.



Thread the No.600 loom as follows;-

1,2,3,4, repeat 3x, then 9 pattern repeats as given at the right, then to end thread the first 30 threads of the draft. This takes up 600 threads, or 10 spools of 40/2 linen. Weft used was No.14 half bleach.

Only one shuttle was used and no plain tabby shots were used, Just one shot on each pattern shed in the order as given below, for levers of Struoto table loom.

Treading;-

3-4,1-4,1-2, 2-3, repeat 4x. Then 3-4,1-4,3-4,2-3,1-2,1-4,1-2,2-3, 3-4,1-4,3-4. Now 2-3,1-2,1-4,3-4, repeated 4x. Then 2-3,1-2,1-4,1-2, 2-3,3-4,1-4,3-4,2-3,1-2,1-4,1-2, 2-3. Repeat from the beginning until of the desired length.

This would also make an attractive luncheon set woven of 40/2 linen like the warp. Bags would be nice woven on the same warp of rayon or fine silk chenille, or of fabri yarn.

(Note that the pattern is twill combined with "Rose-path" as described in the June News.)

Designing Four Harness Loom Patterns

by NELLIE SARGENT JOHNSON

(Special Instructor in Weaving, Wayne University, Detroit, Mich.)

Designing ones own pattern drafts is always interesting. In fact I know of nothing more exciting than to plan, thread up the loom, and then weave a pattern which evolved from your own self, even though that pattern be of the very simplest kind.

This method of designing is based on variations of twill, herring-bone, and rose-path threading drafts, and it is my purpose to try and show you how very simple it is to create your own threading drafts by using these as your basic drafts. If you once understand how to do this many other possibilities will occur to you as you work out the drafts. The first description of this as a means of creating new patterns, was written up in Handweaving News for June 1936, a monthly leaflet on weaving. This has been so helpful to my own students in learning how to draft their own patterns, that it gives me much pleasure to send it out to further usefulness.

Let us start with the simple four harness twill, which should be familiar to every weaver. This is just one thread on each harness, 1,2,3, and 4, repeated all across the width of the loom. Herring-bone, or reversed twill is 1,2,3, 4,3, and 2; one thread on each harness, repeated all across the width of the loom. And the so called "Rose-path" or "Rosengang", to use the Scandinavian term, is as follows;-1,2, 3,4,1,4,3,2,

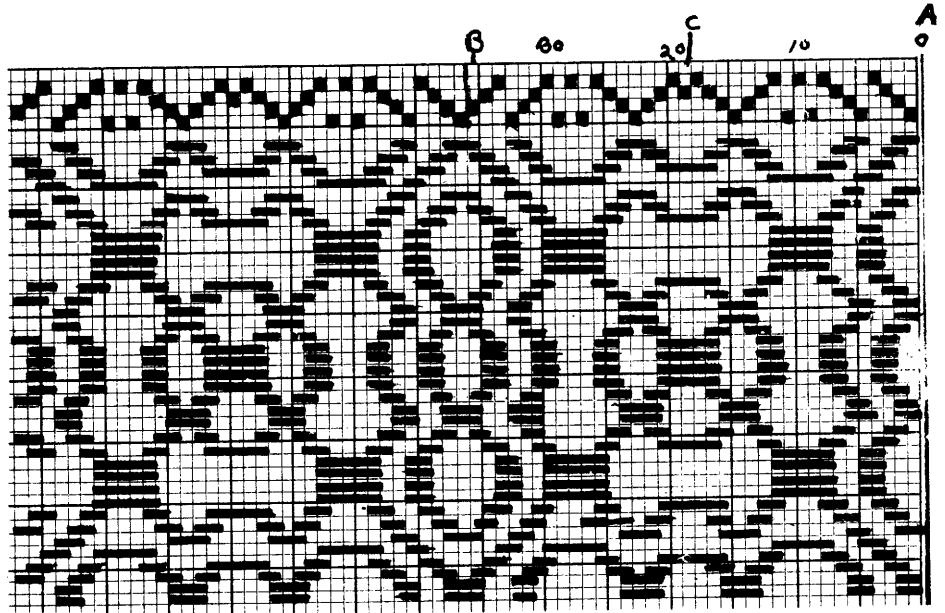
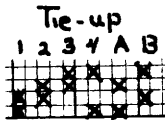
repeated one thread on each harness for the width of the loom. Now with pencil and cross section paper, write 1,2,3,4, or twill, then write 1,2,3,4,3,2; which is the herring-bone or reverse twill; then write 1,2,3,4, 1,4,3,2, which is rose-path. This is shown at Draft No. 1; A group is your twill, B group is herring-bone, and C group is the rose path.

Now this could be used as a repeat just as it is, but in order to have the draft balance, note that the thread on harness 1 at C can be used as the center thread of the repeat, and the pattern continued in reverse from this as a center. Group D is herring-bone repeated as at B, and E group is the twill which was written at group A. Now if you continue, you will see that this is one full repeat, but that the last twill ends with a thread on harness 2. The reason for this is that if you add a thread on harness 1 to complete this twill, and then repeat your pattern, as you wrote it exactly at the beginning, you would have two threads together on harness 1. When you repeat your pattern, be sure you do not have two threads come together on the same harness, and it is always best to write out two full repeats of your pattern to see that it is correct. Also be sure and note your center threads carefully, and write your pattern on each side of this center. In this pattern Draft No. 1, you will see that when it repeats back from the begin-

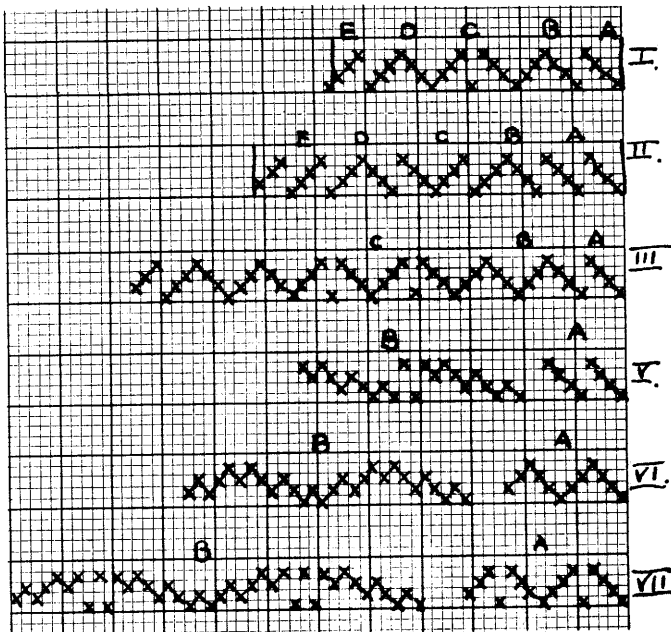
"HEARTS AND FLOWERS". DRAFT NO.VIII. Designed by Marie Copland.

To weave this pattern on the Structo loom, use levers as follows,-
 34-1,14-1,12-1,23-1,
 34-1,14-1,12-1,23-4x,
 12-1,14-1,34-2x,14-1,
 12-4x center,repeat
 back to beginning in
 same order.

From A to B is one repeat of the pattern. C marks the center of the pattern. Two repeats are given.



VARIATIONS OF TWILL, HERRINGBONE
 AND ROSE-PATH



ning, you will have another center for the draft at thread No. 1, where you begin your next repeat. You can use these three basic threadings in any order you wish, and also repeat them as many times as you wish. At Draft No. 2, the twill is repeated twice in group A, herringbone once in group B, then the herringbone is reversed at C group. The D group is the same as B, and E group is the same as A which is the twill repeated twice.

Note the centers of Draft No. 2 at thread 19, and at thread 1 where the pattern begins. Draft No. III. has one repeat of the twill, two repeats of herring-bone, two repeats of rose-path, then two repeats of herringbone, and one twill as at the

beginning, but this last repeat of twill has the last thread omitted so as not to bring two threads together on harness 1 when the draft is repeated. Note that the center of the draft is at thread 25, and also at thread 1.

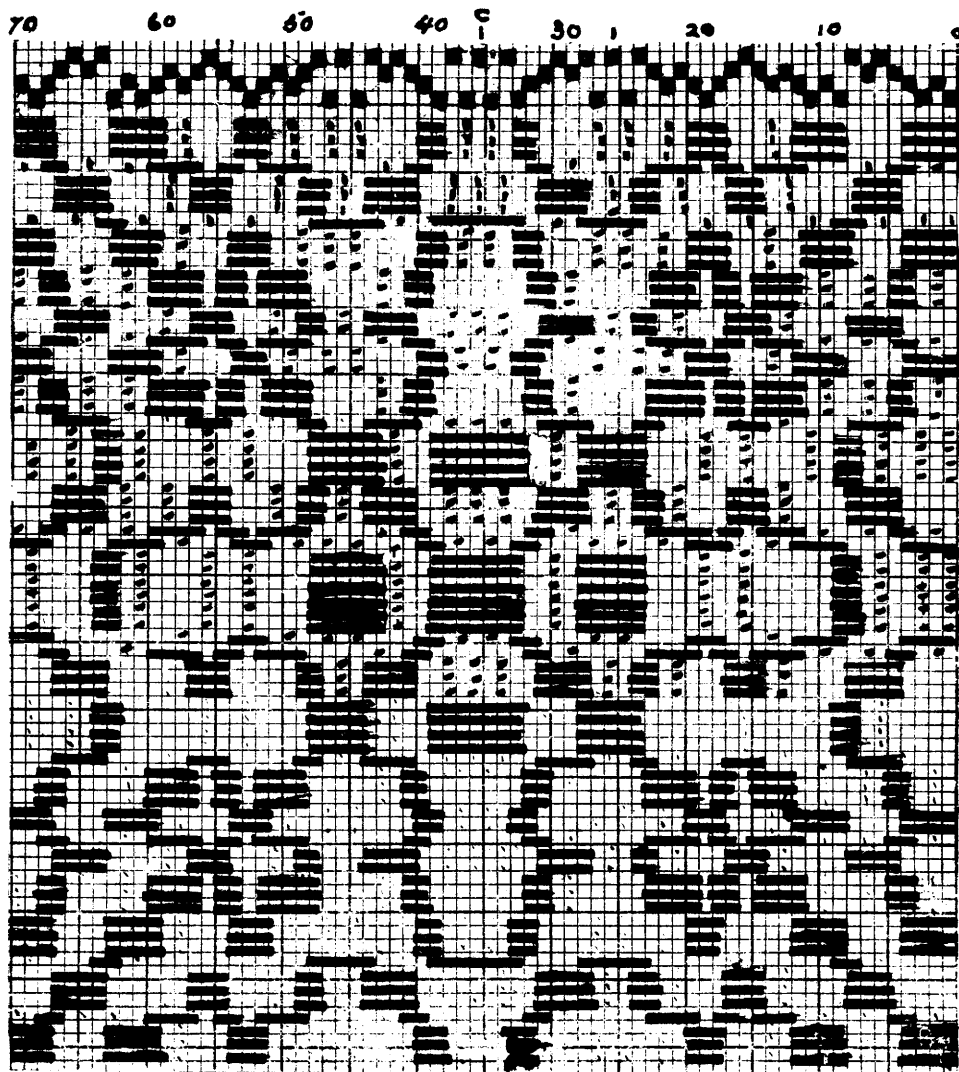
Draft No. 4 was worked out by Mrs. Evelyn Lauer, one of my students drafted this from a photograph of the wedding linen of Sidney Howland, of Mayflower decent. This textile is on page 76 of the book "Early American Textiles" by Frances Little. Mrs. Lauer drew the draft from the photograph and used it for linen towels. Note how even the old drafts were based on this same idea. You can easily pick out the combination of twill and rose-path threadings in this draft. Simple threading drafts such as these are very useful for many things. Bags, linens, upholstery fabrics or any fabric where you wish a short skip, can be woven in this way, using any combination of these three basic threadings.

The next step is to write pattern blocks of different sizes to get more variations into the pattern. At Draft V. is shown two repeats, of twill at A. At B, is the same thing but each pattern block has four threads instead of just two. The pattern blocks on a 4 harness loom are made up of combinations of harness 1 & 2, harness 2 & 3, harness 3 & 4, harness 4 & 1, with the plain weave on harness 1 & 3, and its opposite 2 & 4.

Draft No. VI. shows two repeats of the simple herringbone at A, and two repeats of the same thing at B except that each pattern block is increased by two threads. Note this draft *carefully*, at the block where the pattern reverses, or repeats back, this pattern block is always an odd number of threads. The smallest number of threads which can be written at the point where a pattern reverses is a three thread block, the next largest must be a five thread block, the next seven threads and so on. You can make this block no smaller than three threads, it can be as large as you choose to write it, but always an odd number of threads. At Draft No. VII, rose-path is increased at B to four thread blocks, the only difference there will be when these drafts are woven, is that the over-shot skips will be longer than the drafts at A, of V, VI, and VII. You can write your pattern blocks with as many threads as you may

This pattern would be attractive for bags set at 15 threads to the inch. carpet warp with Germantown or Knitting yarn for the weft. Or if desired can be set at 30 threads to the inch in fine warp as No. 20 mer cotton, 20/2 cotton, or 40/2 linen. At this setting would make excellent upholstery material. All of the one thread skips are not drawn out on the diagram at the right but just enough to show the effect.

To weave as the pattern is drawn out, -
 34-3x, 14-1, 12-3x, 23-1,
 34-3x, 14-3x, 12-2x, 14-1,
 34-2x, 14-3x, 12-1, 23-4x,
 12-3x, 14-1, 34-1, 23-6x; -
 center, repeat back in same order to beginning. This order of treadling is arranged for the levers of the Structo loom.



wish, but the pattern block on which the draft repeats back or reverses must *always* be of an odd number of threads. You can write your pattern blocks all the same size if you wish, but your patterns will be much more interesting and varied if you write your pattern blocks of different sizes. Note the variety of Draft VIII. "Hearts and Flowers," drawn by one of my students Marie Copland. From A to B is one repeat of the pattern, two repeats are given, and C marks the center of one repeat. And another center also occurs at thread one at the beginning of the repeat. This pattern is useful for many different types of fabrics, and can be used with almost any type of warp and weft. It is an excellent threading for linens or bags, and possible to weave a great many good borders with it.

Draft No. IX. is another pattern draft designed by Marie Copland. If you wish to get the full effect of this pattern, draw out two repeats of the threading, instead of just one as is given here. Note how the sizes of the pattern blocks have been changed to get the great variety. This "Snowflake" draft is attractive woven also. All of the single dots

representing the single over-thread skips were not drawn in on the lower half of this drawing.

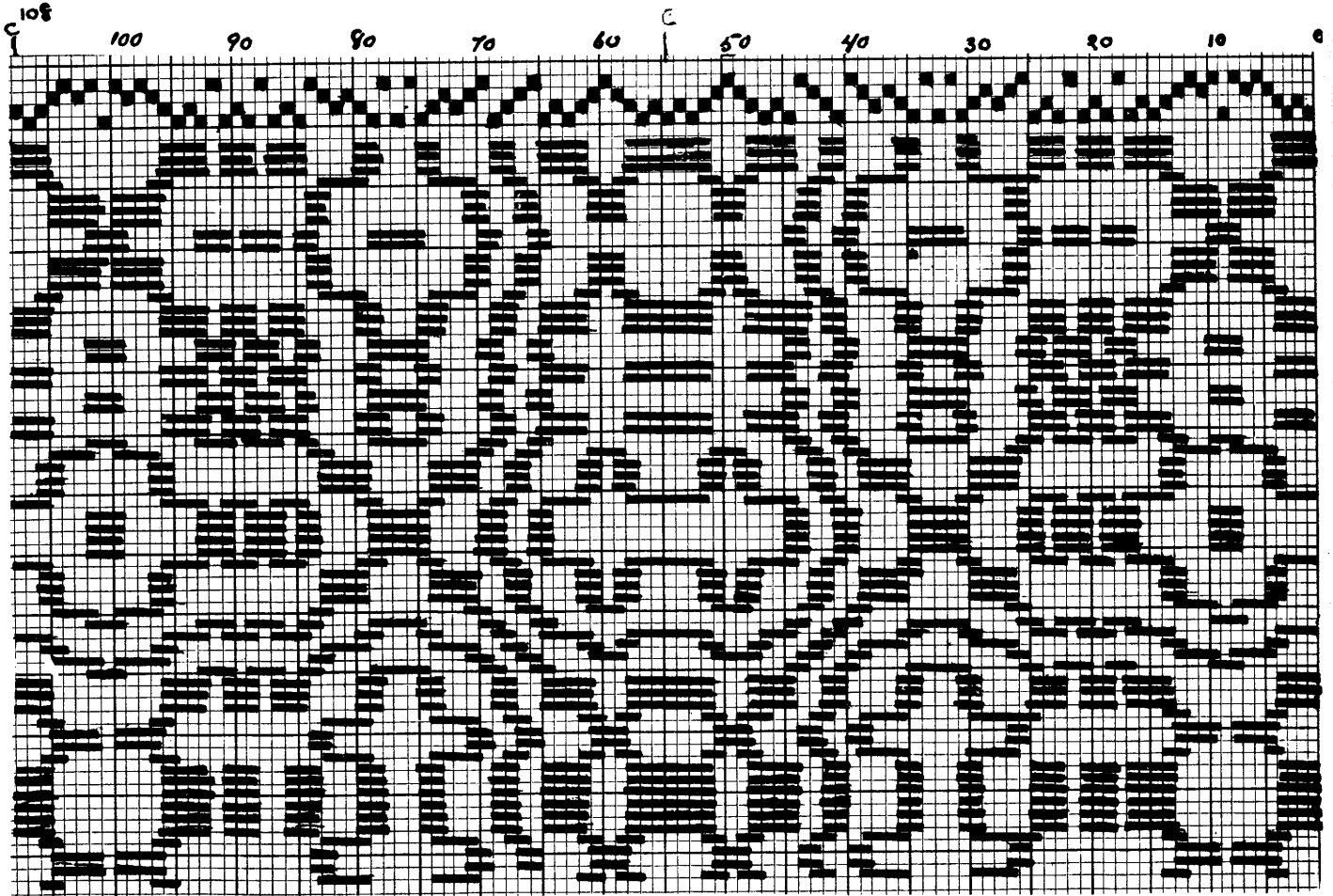
Draft No. X is "Copland's Fancy" or "Electric Light". It gives a rather odd effect, quite different from old Colonial drafts. The center of the draft is at thread 55. This pattern also needs to be written out with two repeats to show the full effect of the draft. On this draft note how the rose-path threading has been varied at the beginning, and also the repetition of the 1 & 2, and 1 & 4 pattern blocks at thread 16 to 26. It is always possible to repeat two pattern blocks in this way for variation. The old drafts contain many repeats of two pattern blocks, and are generally called "tables" if they are repeated enough times to have any considerable size. Also note at this point, that the repeat begins with a four thread block, and ends with a two thread block. The old patterns usually are written so they will balance, but she did not wish this to balance here.

Many other variations can be planned out using these simple basic threadings as a guide. No one who understands this kind of drafting need ever wonder what they can use

"ELECTRIC LIGHT" OR "COPLAND'S FANCY". DRAFT NO.X.

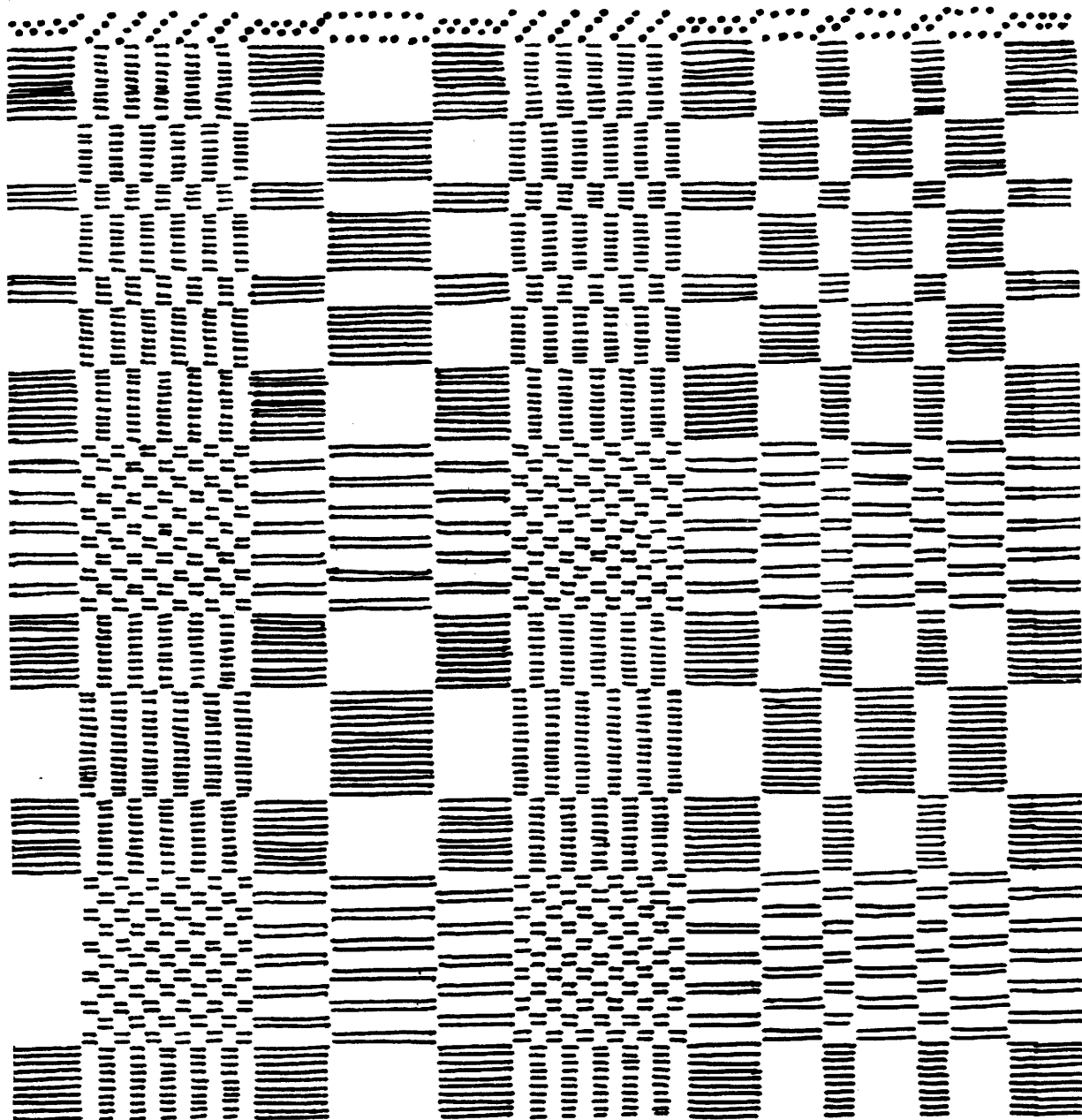
Designed by Marie Copland.

In this draft note how the rosepath threading has been varied at the beginning, and also the repetition of the 1&2 and 1&4 pattern blocks from thread 16 to 26, and the odd effect produced as the pattern is drawn out below.



for a new threading draft. This method of writing pattern drafts has been much easier to learn than the way in which I myself learned it, and the ideas for it came to me once when I was trying to see how small I could reduce some of the large Old Colonial drafts which were very large thread-

ings and with large pattern blocks. I hope this method will be helpful, and even if you are a beginner, or perhaps an advanced weaver, that you will try it out and see what you can do with it for your own new patterns. I will gladly answer questions concerning it, if anyone wishes to write me.



Two Unusual Patterns

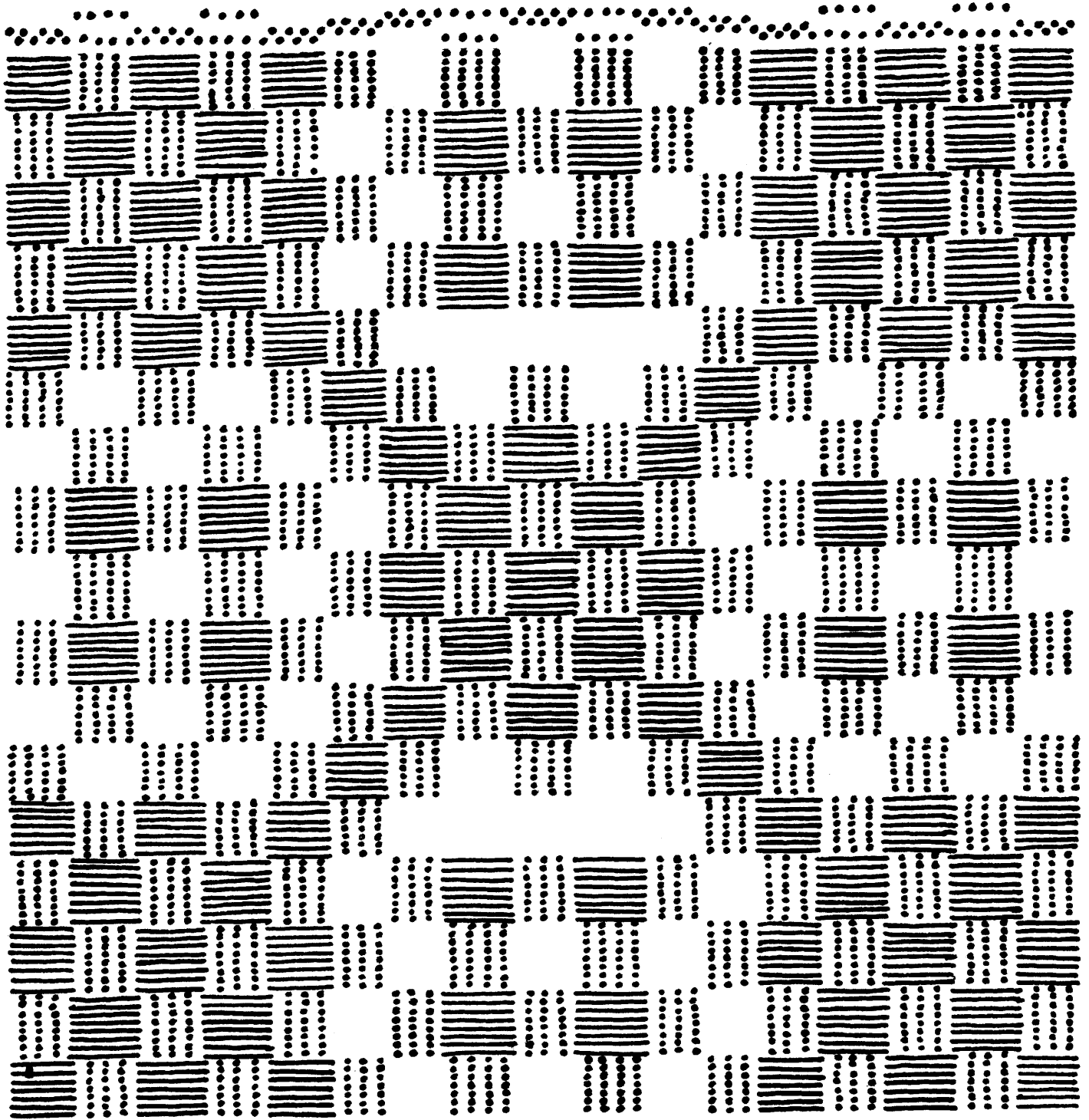
by C. M. YOUSE

A short time ago I came across these two old patterns and upon looking them over found them to be quite unusual and out of the ordinary.

The Mountain Honey Comb came to me from the mountains of West Virginia and was dated April 1877. It is a two block pattern written on opposite sheds and two tabby combinations are possible. If a table loom is used that operates with a rising shed the 1-3, 2-4 tabby may be used or the 1-2, 3-4 tabby. One way to weave this pattern is—as drawn in. On a fine cotton warp like 20/2 or fine mercerized cotton set 30 threads to the inch use pattern thread of home-

spun with a tabby the same as the warp. A good color combination would be, a black warp, black tabby, pattern thread turkey red for all the 1-4 shots and a bright blue for all the 2-3 shots. A clear cut plaid will result with the little accidentals separating the plaid tables in a pleasing way.

For table looms weave 1-4—red—10 times; 2-3—blue—8 times; 1-4—red—4 times; 2-3—blue—8 times; 1-4—red—4 times; 2-3—blue—8 times; 1-4—red—10 times; 2-3—blue—2 times; 1-4—red—2 times; repeat 4 times then weave the 2-3 shed blue 2 times and repeat from beginning.



The Double Peach Seed draft was dated 1838, which makes it just one hundred years old. I found it to be a fascinating pattern to work out. The draft shows the unusual combination of the 1-2, 1-4 sheds and the next figure the 2-3, 3-4, 1-4 sheds written in such a way that the result is the four block detached figure, from which no doubt the pattern was named; and the square table showing the diagonal. The figures alternate in such a way that shows good design. This pattern shows up at its best when woven as drawn in.

For a table scarf 36 x 18 in two colors use Bernat's Glosheen in cream color, for warp and tabby. For pattern

thread use Canterbury yarn in Colonial blue. Set the warp 15 threads to the inch—270 threads, each thread 1½ yards long. Weave a border 1½ inches in cream color, then start pattern and weave 33 inches, then weave 1½ inches in plain tabby to balance other end.

You will find that by using a tabby the same as the warp the design will stand out quite clear.

For table looms weave—3-4—7 times; 2-3—8 times; 3-4—8 times; 2-3—8 times; 3-4—7 times; 1-4—7 times; 1-2—7 times; 2-3—8 times; 1-2—8 times; 2-3—7 times; 1-2—7 times; 1-4—7 times. Repeat.

Scandinavian Spetsvav

by ELMER WALLACE HICKMAN

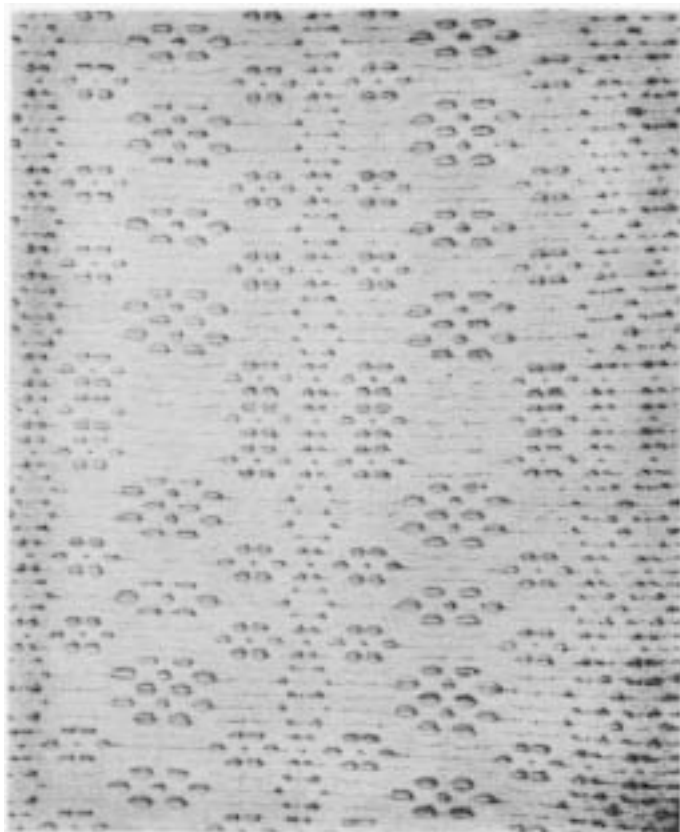


ILLUSTRATION No. 1—Showing detail of weave.

The reader who is acquainted with the "Honey Comb" weave will immediately recognize a similarity in the photographic illustrations accompanying this article.

There is a similarity, for they are of the same technique. The weave which is, in all probability, Scandinavian in origin is known in Sweden, Norway and Denmark by the names of "Spetsvav", "Halkrus", "Gagnefkrus", "Svaert Piket", etc. "Spetsvav" is conveniently translated "Lacey-weave". Such terms as "Halkrus" and "Gagnefkrus" may be literally translated into such amusing names as "ruffle-holes" or "dimples" and "useful holes". Let us rather call the weave "Lacey-weave". This will distinguish it somewhat from a weave known in this country as "lace-weave". The name "Lacey-weave" is quite appropriate for this weave as the technique really produces a fabric that simulates lace, except that there are no openings as in actual lace; a material with deep set depressions backed by a ground work of weft and warp threads is the resultant fabric.

Because of the usability of this interesting technique and because it is so often neglected by our American weavers, this article may act as a stimulus to some weavers for experimental work in this weave.

My first acquaintance with "Lacey-weave" was about nine years ago when I became interested in the books by Alexander Berger, a man who is considered one of Sweden's weaving experts (vavexperten). In his book, "En Enkel Vavbok", the name "Spetsvav" is given this type of textile.

At first the treadling was a puzzle to decipher in order to get the correct arrangement of his designs, but the task was finally accomplished and one result may be seen represented photographically in Illustration No. 1.

The bag shown in Illustration No. 2 is a varied treadling from the original arrangement in Illustration No. 1.

In Illustration No. 3 the weave of this fabric is designated in Sigrid Palmgren's Vavbok, Volume II, as "Halkdus"; but, regardless, by whatever name this weave is known, the working process is the same. Other pattern drafts than those illustrated are given which have proven successful as well as extremely pleasing.

The weave is really a vertical contradiction of our own overshot weave. The skips seem to form in the warp rather than in the weft and what actually makes the design are two tabby shots of a heavier yarn than that used for the pattern shots. Therefore, that which would make the figure in the overshot (the pattern treadles) forms the ground work (botteninslag) in this weave, and what makes plain or tabby weave in the overshot weave really forms the design in "Lacey-weave". This is accomplished by the tabby shots pushing down compactly the weft that was put in on the pattern treadled sheds. In Sigrid Palmgren's book the tabby shots weft is truly called "pattern weft" (figurinslag) and the pattern shots weft is called "tabby weft" (botteninslag).

This weave is applicable to a great many uses: pillow tops, knitting bags, evening purses and bags, coverlets, table covers, runners, etc. The wrong side of the material shows a vast amount of loose weft threads; consequently, the fabric should not be used when a fabric of both sides is desirable.



ILLUSTRATION No. 2—Bag woven in Saxony white wool with variegated Rayon Floss for the background.

This weave has been used for furniture covering material (mobeltyg), but I doubt the practicability of its use for this purpose. I have seen rugs woven in this technique—even rag rugs (Trasmatta)—, but unless the pattern draft is a simple one, it is rather inadvisable (to my way of thinking) to adopt this weave for such textiles.

For coverlets, a pattern draft should be selected such as Draft No. 4 so that the long skips on the wrong and right sides are not too troublesome, and the fabric should be woven with fine weft in order that the web can be beaten down closely to form a more firm material than is ordinarily desired in this weave.

The entire process is a shuttle-weave, requiring at least two shuttles to accomplish the proper result.

The weft for the ground work necessitates that a finer thread than the tabby thread be used—a reversal of what is customarily used for our regular overshot weaves. For warp, almost any good warp yarn may be chosen; although, because a great deal of the warp shows, the choice of warp must be left to the discretion of the weaver. Cottons, linens and wools for wefts are easily adaptable—according to the warp yarns selected.

Different combinations of yarns are here suggested: for table covers and runners, 40/2 for the ground pattern shots with a heavy cotton weft such as 16/2 doubled, three-fold or four-fold for the tabby shots. A 20/2 or 24/3 cotton for the warp. The Swedish people seem to admire a white tabby with Turkey red for the finer pattern shots. However, any colors of yarns may be used; that must be decided by each individual weaver.

Evening bags: Bernat's Art Silk (Raytone) or Sennah for the ground weft and a soft yarn like Germantown or Glorine for the tabby shots. Either a wool, mercerized, Perle or silk warp would be in good taste. Bernat's Afghan and Saxony also make a good combination for the weft yarns.

Knitting bags: two thicknesses of linen yarns for warp and weft; wool yarns such as Bernat's Lady Helen or Weaving Special for the pattern shots and Knitting Worsted or French Tapestry for the tabby shots. If one strand of the heavier yarn is not thick enough, use two strands for the tabby shots.

Pillow tops: Fabri wool yarn for the ground or pattern shots with Zephyr or Knitting Worsted for the tabby shots. Summer porch pillows in brilliant linen yarns for warp and weft would prove strikingly beautiful.

The weaver himself or herself can quickly see the possibilities and practical applications of this weave to many useful articles for the home and for sale.

There are no required number of pattern treadled shots for the ground work which makes the bottom or background of the depressions. The number will have to be decided by the weaver with respect to the fineness or the coarseness of yarns chosen for the weaving. Ordinarily four, six or eight shots on the so-called pattern sheds—between each two tabby shots—are usually satisfactory. If the material is to be of a solid construction, less pattern shots will be needed between the tabby shots than when the material is of a looser texture. The main principle of this weave is not to have the depressions too large as the warp skips on the right side of the material will be too long, which is undesirable. One can readily see this as one weaves.

Since most of us weavers are anxious to add books to our weaving library, I am listing below several Scandinavian books that contain pattern drafts and "set-ups" for "Lacey-

weave". Any of these books—all are inexpensive—may be obtained from Albert Bonnier Publishing Company, 561 Third Avenue, New York City, New York.

"Jamtlandsdrall" by Maria Moden-Olsson

"En Enkel Vavbok" by Alexander Berger

"Vara Hemvavnader" by Maria Collin

"Praktisk Vavbok", Volume II by Sigrid Palmgren

"Vavbok" by Hulda Peters

"Ostgotavavnader" by Eva Odlund

"Hemmets Vavbok" by Elisabeth Waern-Bugge

The "set-ups" for the several pattern drafts are given below:

Draft No. 1 "Honey Comb"

Warp: Cotton 20/2 or 20/3

Weft: Cotton, Turkey red 20/2 for pattern shots

White cotton No. 10/2 for tabby shots (double if necessary)

Reed: 15 dent

Threading: 1 warp thread in each heddle; 2 in each dent of reed. Repeat threading draft as needed.

Treadling: Treadle 1; then 2 for about six shots each; tabby 1 & 3, and 2 & 4 (each once). Next treadle 3; then 4 (six times); tabby 1 & 3, and 2 & 4. Repeat this process for entire length of web.

Draft No. 2 "Spetsvav" from "En Enkel Vavbok"

Warp: Perle cotton No. 20

Weft: Pattern shots—same as warp

Tabby shots—Perle cotton No. 3 or No. 5

Reed: 15 dent

Threading: 1 warp thread in each heddle, 2 in each dent

Treadling: Treadle 2; then 3—eight times—tabby 1 & 3; 2 & 4 once

Treadling: Treadle 1; then 4—eight times—tabby

" 1; " 2— " " "

" 3; " 4— " " "

" 1; " 2— " " "

" 1; " 4— " " "

" 2; " 3— " " "

This makes the larger group of "small holes" in the design

Treadle 1; then 2—eight times—tabby

" 3; " 4— " " "

" 1; " 2— " " "

" 3; " 4— " " "

" 1; " 2— " " "

This combination is for the larger group of "large holes"

Treadle 1; then 2—eight times—tabby

" 3; " 4— " " "

" 1; " 2— " " "

This is for the smaller group of "large holes"

Treadle 1; then 4—eight times—tabby

" 2; " 3— " " "

" 1; " 4— " " "

This is for the smaller group of "small holes"

For Table Looms the treadling would be: 1—2-3-4; 2—1-3-4; 3—1-2-4; 4—1-2-3. Any color combinations of yarns, of course, may be selected. Repeat the threading of the draft for the desired width of the fabric.

Draft No. 3 "Spetsvav"

Warp: 30/2 white cotton

Weft: Pattern shots—same as warp

Tabby shots—heavy cotton

Wools may be substituted for cottons

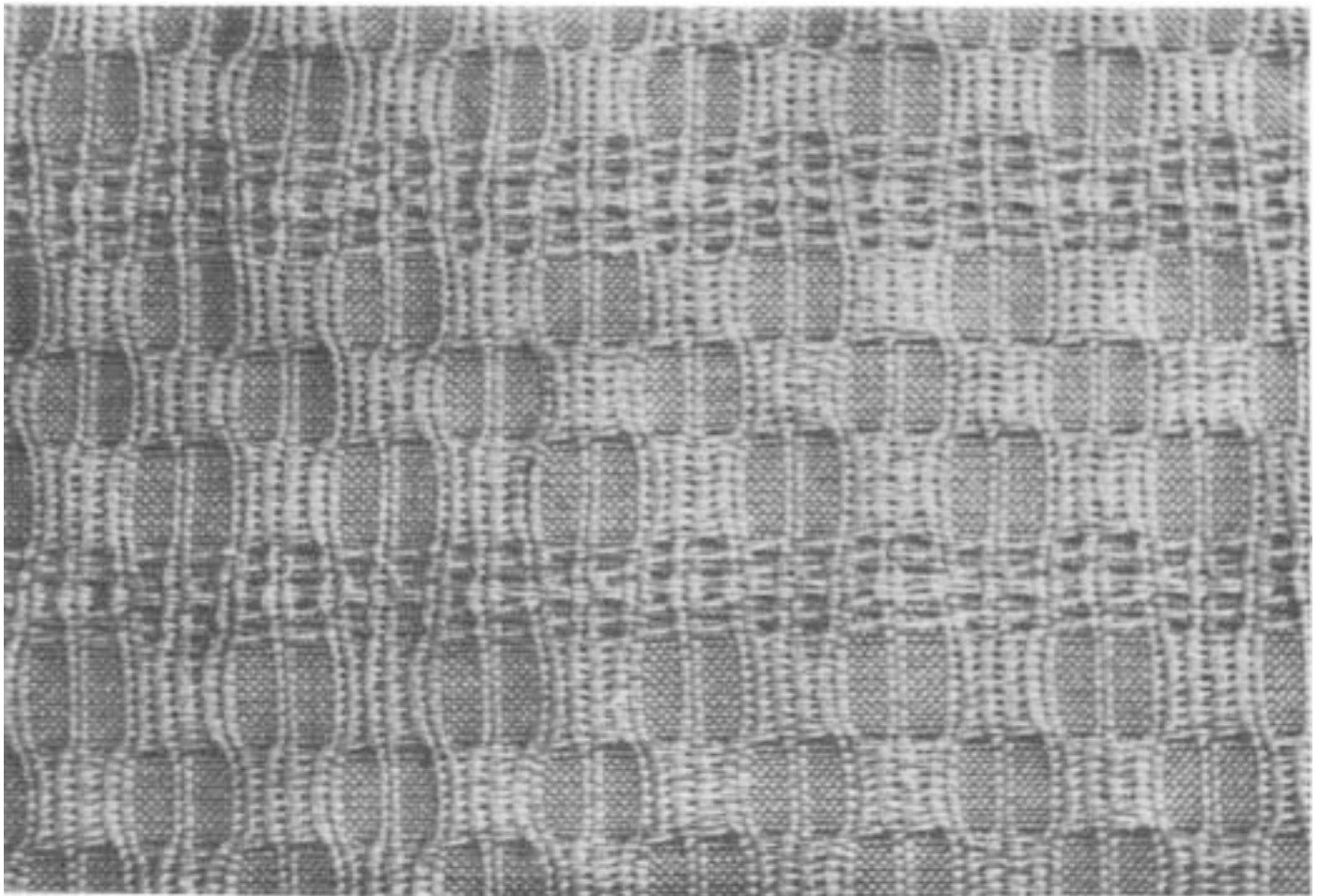


ILLUSTRATION No. 3—Showing detail of weave.

Reed: 12 dent

Threading: 1 in each heddle, 2 in each dent

Treadling: Treadle 4; then 1—six times—tabby 1 & 3;
2 & 4, each once

Treadling: Treadle 4; then 3—six times—tabby
" 2; " 3—" " "
" 2; " 1—" " "

This draft can be used for a coarser textile than No. 2.
Transpose treadling for Table Looms.

Draft No. 4 Table-cloth in "Gagnefkrus" from "Hem-
mets Vavbok"

Warp: Cotton 20/2 or linen 40/2

Weft: Pattern shots—same as warp

Tabby shots—16/3 or 16/4 cotton or No. 10
Linen or Linen Floss

Reed: 15 dent

Threading: 1 in each heddle; 2 in each dent

Treadling: For Table Looms

Lever 1,2,3; then 1,2,4—four times—tabby 1 & 3,
and 2 & 4

" 1,3,4; " 2,3,4— " " "

" 1,2,4; " 1,3,4—once "

" 1,2,3; " 2,3,4—once "

" 1,2,3; " 1,2,4—four times "

Lever 1,2,3; then 2,3,4—once—tabby 1 & 3,

and 2 & 4

" 1,2,4; " 1,3,4— " "

The square part of the design is made with 6 times A
alternating with 5 times B.

A. Lever 1,2,4; then 1,3,4—twice—tabby

B. " 1,2,3; " 2,3,4— " "

The number of times that each combination of pattern
shots is made may be changed to suit the weaver's needs.
Transpose treadling for Floor Looms.

Draft No. 5 "Gagnefkrus" from Palmgren's "Vavbok",
Volume II

Warp: colored cotton No. 30/2

Weft: Pattern shots—same as warp

Tabby shots—heavy cotton thread or four strands
of the warp

Reed: 12 dent

Threading: 1 thread in each heddle; 2 in dents of reed

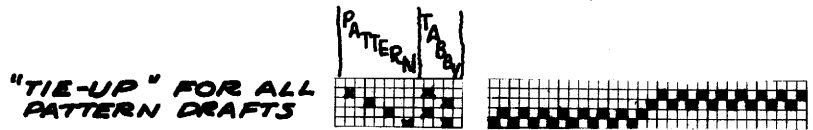
Treadling: For Table Looms

Lever 1,2,3; then 1,2,4—eight times—tabby

" 1,3,4; " 2,3,4— " " "

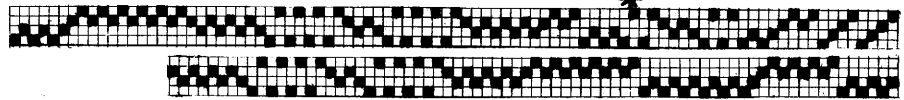
From the suggestions above it will be possible to arrange
desirable "set-ups" for the other drafts that are given or that
one wishes to use. Many combinations of colors and yarns
that will be agreeable to the eye can be worked out, so that
the "Lacey-weave" technique will make a thoroughly enjoy-
able weave to carry out at the loom.

SCANDINAVIAN SPETSVÄV OR LACEY - WEAVE



DRAFT NO.1 HONEYCOMB

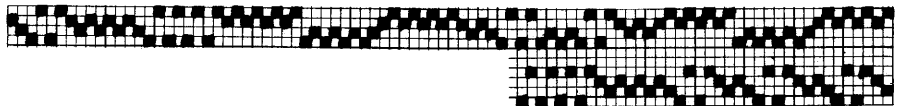
ON LAST REPEAT
OF PATTERN
THREAD TO STAR (*)



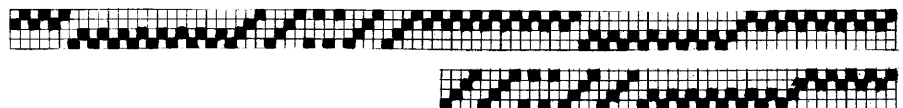
"EN ENKEL VÄVBOK" DRAFT NO.2 SPETSVÄV



"EN ENKEL VÄVBOK" DRAFT NO.3 SPETSVÄV



"HEMMET'S VÄVBOK" DRAFT NO.4 GAGNEFKRUS



"PRAKTISK VÄVBOK" DRAFT NO.5 GAGNEFKRUS



THREADING - A,B,A,B - C,D,C,D OR B,A,C,B - D,C,A,C,D
"JÄMTLANDSDRÄLL" DRAFT NO.6 SPETSVÄV



PETER'S "VÄVBOK" DRAFT NO.7 HÅLKRUS

EACH DRAFT SHOWS ONE REPEAT OF PATTERN. USE AS MANY REPEATS NECESSARY FOR DESIRED WIDTH OF FABRIC

EWH



A Study in Doiley Design

by FLORENCE CATHCART FOWLE

That praiseworthy quality of linen, of increasing in beauty with use, makes it especially adapted to table linen. As the present day vogue for place mats rather than table cloths is as well adapted to the small looms which are convenient to house and simple to operate, there is much encouragement for weavers to make their own linen sets. There is however a mechanical difficulty in cutting a woven strip into doilies and finishing the cut ends so that they are like the selvages. Merely to hem the two cut ends, or even to hemstitch them with a decorative finish does not answer the requirements. And to sacrifice the selvages, those prime elements of beauty in a hand-woven fabric and the pride of a good weaver, by treating them with a decorative finish would be unthinkable.

The three doilies illustrated were designed to meet this difficulty. The first two were woven on the familiar Betsy Ross arrangement of the M'd and O's linen threading. For convenient reference the threading plan is given. It is arranged for five hundred and forty four heddles, to be reeded two to a dent in a number fifteen reed. It will be eighteen inches wide on the loom, and will finish about seventeen inches wide.

When setting up the loom for the first doiley thread the twenty-seventh and twenty-eighth heddles from each side with Bernat's linen floss, white, double in the heddle. For the main warp Bernat's forties twos, white, is a soft half-white shade, not chalky white as some bleached linens are, and makes a most satisfactory warp through which to weave

colors. The design of the pattern is best brought out when warp and weft are not the same tone. Yellow, pale green or peach, woven across the half-white, are very effective.

When beginning to weave the doiley throw across six or eight picks of linen special of the same color as the floss used as weft for the body of the doiley. Linen weaver may be used as weft instead of floss, if a lighter weight doiley is preferred. The floss makes a firm doiley which lies well on the table. These fine picks are for the turn under of the hem. The hem section is woven of floss and is twice as wide as the space between the cord and the selvaige,—about an inch. Twist together two strands of white floss and two strands of linen special of the floss color,—the doiley illustrated is yellow—, and throw through the next shed. It is necessary to add the yellow ends to the white floss to give the cord the same appearance as on the sides. There the white cord is modified by the yellow floss which crosses it. If only floss is used across the white warp the effect will be staring and unlike the side cords. Turn each end of this cord around the last selvaige thread and lay it into the same shed in which it was thrown for about an inch, or a little less. After weaving the center portion of the doiley, throw across a cord as before. Do not cut the linen floss weft when placing the cord, but continue after the cord with the same shuttle. After the second cord, weave an inch of floss for the second hem, and finally the six or eight picks of yellow linen special. Throw across two picks of some different colored

weft for a separation between doilies. Stitch on a machine with fine thread and a fine stitch on the last colored thread on each side of the separation before cutting the doilies apart. Turn under the fine linen edge, then baste this creased edge up to the cord. Hem with fine white thread and fine stitches, as damask napkins are hemmed, and press. The hem should be the same width as the space between the side cords and the selvage and give the effect of a border. If carefully hemmed the hem is scarcely distinguishable and the doiley is reversible.

To achieve absolute uniformity of size I use for a weaving measure a length of strong white tape. Turn under a quarter of an inch and stitch to prevent ravelling. With ink draw a line across the tape to mark the end of the fine linen turn-under, one quarter of an inch, another an inch and a quarter further on to mark the end of the hem. The center, including the cord, should be twelve inches. Stretch the tape beside a yard stick when marking it. The marks should be at $\frac{1}{4}$ "", $1\frac{1}{2}$ "", $13\frac{1}{2}$ "", $14\frac{3}{4}$ "", 15 ". Pin this tape along one selvage when weaving, using three pins put through cross wise, with the points tucked safely under to avoid pricks and bloodshed. As the work progresses, take out the lowest pin and place it ahead of the other two, always leaving two pins to hold the tape securely in position.

THREADING PLAN FOR M'S ANS O'S DOILIES

Right selvage, 4-3-2-1, double in each heddle.

Right edge, 4-3-4-3-2-1-2-1, A

4-2-4-2-3-1-3-1, B

Pattern, 4-3-4-3-2-1-2-1, A

4-2-4-2-3-1-3-1, B

4-3-4-3-2-1-2-1, A

4-2-4-2-3-1-3-1, B, repeated three times

There are forty-eight threads to one repeat of the pattern and it should be threaded ten times.

Left edge, 4-3-4-3-2-1-2-1, A

4-2-4-2-3-1-3-1, B

4-3-4-3-2-1-2-1, A

4-2-4-2-3-1-3-1, B

4-3-4-3-2-1-2-1, A

Left selvage, 4-3-2-1, double in each heddle.

544 heddles will be required, divided evenly 136 heddles on each frame. In this threading plan the front harness is considered the first.

WARP PLAN FOR DOILEY NO. 1.

Linen warp, 30 ends Bernat's 40/2 warp linen, white.

Linen floss, Bernat's No. 235, white, 4 ends.

Linen warp, 40/2, 488 ends.

Linen floss, 4 ends.

Linen warp, 40/2, 30 ends.

Total ends, 556, of which 548 are linen warp and 8 are floss.

On a foot power loom tie the treadles to be brought down as follows:

Treadle	Depresses harnesses	Shuttle goes from the
1	2 & 4	right
2	1 & 3	left
6	3 & 4	right
5	1 & 2	left
3	1 & 4	
4	2 & 3	

Weave the hem in small groups, as many as necessary to fill the space required for the hem. Linen floss needs fewer shots to square the blocks. The number also depends on the beating. Laying eight picks to the half inch the weaving directions would be:

Treadle	Shuttle from	
1	right	
2	left	6 picks
6	right	
5	left	6 picks

Repeat these two groups for the space of the hem. After laying in the cord on any shed except the last used or the one about to be used, weave the center

Treadle	Shuttle from the	
1	right	
2	left	6 picks
6	right	
5	left	6 picks
1	right	
2	left	12 picks
6	right	
5	left	6 picks

Repeat this treadling for the center of the doiley, ending if possible, with two small groups after the last large group, leaving space to place the second cord before reaching the mark indicating the beginning of the second hem. Weave the second hem as the first. The treadling used for the fine turn-under is unimportant.

Of course for a table loom operated by levers causing a rising shed, all these directions should be transposed. Depress, for treadle 1, all levers *except* 1 and 2, namely 3 and 4.

The tie-up given above is arranged for ease in treadling. It is quicker to place the foot on the outside treadle when changing groups. The two center treadles need not be tied unless desired, but are useful in taking the crosses which are necessary when tying on a new warp. The threading has no tabby, although treadles 3 and 4 make a near tabby. When taking the crosses to obtain the exact order of ends, four shed sticks will be required. Small metal curtain rods make good shed sticks. Depress harnesses 1 and 4 (treadle 3), insert the first stick and push it forwards. Next depress harnesses 2 and 3 (treadle 4), and insert the second stick. The third stick goes through when harnesses 1 and 2 are down (treadle 5) and the fourth when harnesses 3 and 4 (treadle 6) are down. If the cross does not appear between the first two shed sticks it will appear between the last two.

Napkins to match this set may be made on the same warp, using linen special for filler and weaving 16 inches for the center.

The second doiley is made on the same threading as the first, but has color introduced into the warp. This doiley must be developed in yarn of the same size each way. Linen special should be used to go through the forty's two's warp. If a heavier warp is desired, the threading must be rearranged for fewer ends to the inch, and linen weaver used. With the threading under discussion, Bernat's dyed warp, 40's, 2's, will be drawn in the warp as indicated in the warp plan following, and linen special of the same color used in weaving the border. The illustration, which was a study made on an eight inch loom, has yellow edges and center and brown border. Natural or white linen edges and center, with the border in color, is good.

The warp plan is as follows:

32 ends for selvage and edge (4 doubles in outside heddles), yellow in sample.

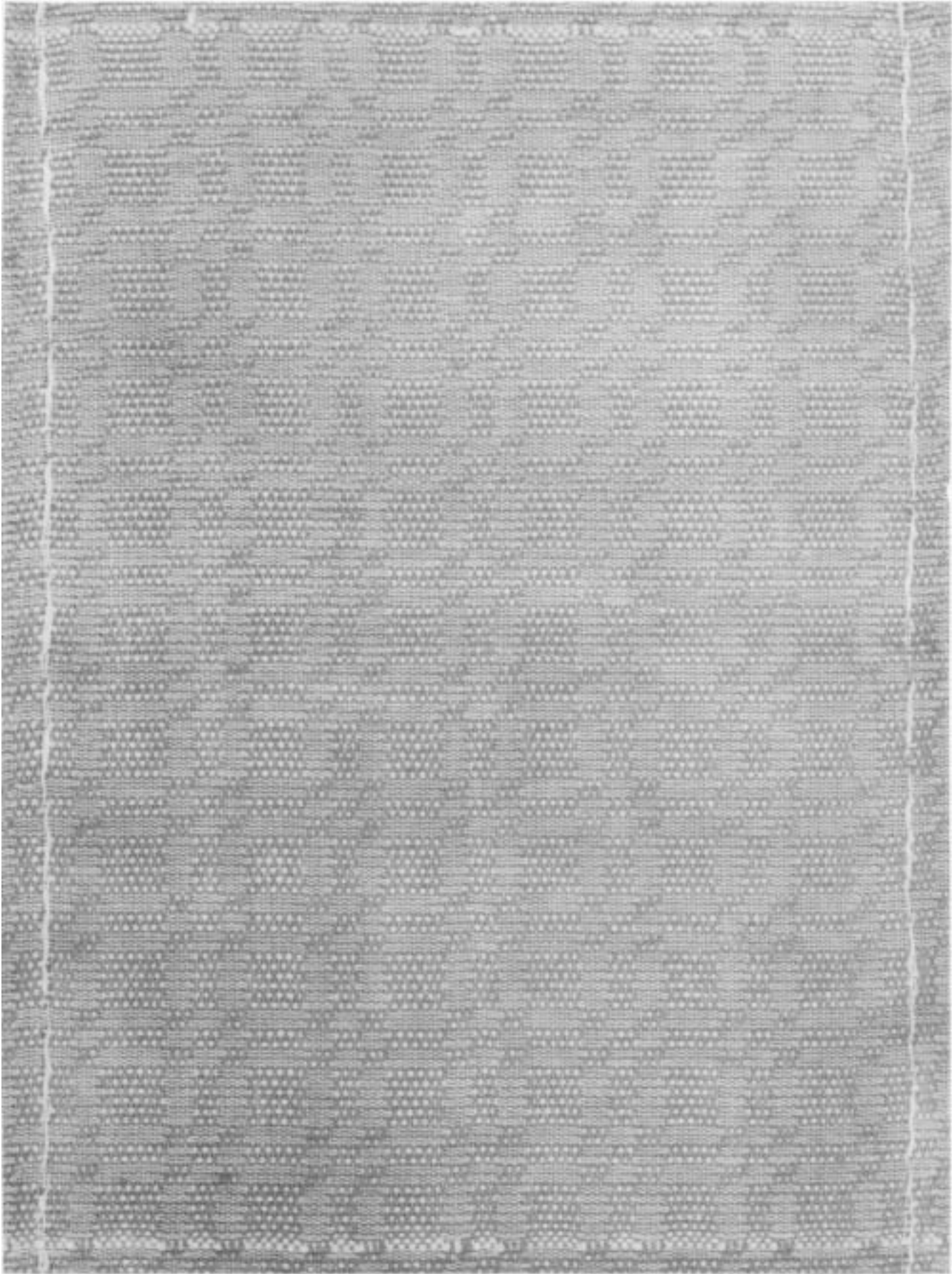
56 ends for the border, brown in sample.

376 ends for the center, yellow in sample.

56 ends for border, brown in sample.

32 ends for selvage and edge (4 doubles), yellow in sample.

The total is 552 ends, eight more ends than heddles.



The third doiley is an arrangement of a Swedish plan for putting the design in the warp, using only white for weft. The warp should be 40/3, set two to a dent in a number 12 reed. The yarn producing the pattern is Bernat's linen floss. In the corner blocks the pattern threads do not weave but lie on the surface as warp floats. Along the sides, between the corner blocks, the pattern threads are bound in a way which I fear would not be approved in Sweden where patterns are traditional. However I always enjoy weaving a pattern in an unconventional manner.

Here again we are confronted by the difficulty of achieving the same border effect across the warp as occurs along the edges. The warp ends are closer together than it is possible to weave the weft threads. An approximate effect is secured by alternating, in weaving the border, two picks of

floss with one pick of white linen special, to allow the color to be pressed more closely together.

Here as in the first doiley a fine yarn is used for the turn-under to decrease bulk. As considerable linen floss is used as weft in the borders, great care must be taken to avoid widening the doiley at these points. Let the floss lie almost flat in the shed before beating, and the fine white weft between shots of floss as slack as is possible without causing loops to protrude between the warp threads. The forties threes used for warp should be used for filler, or if a softer texture is desired, a single linen of the same size, a number ten. Any finer yarns in either warp or weft will make it extremely difficult to hold the width of the doiley in the center equal to the width of the borders. As the weaving directions are quite complicated they are given in full below.

Warp plan for over-laid pattern.		Heddles on harness				Dents	Heddles	Linen	Floss	Total ends
Threading		4	3	2	1					
Right edge (1-2) 12 times				12	12	12	24	28	28	
(4 doubles)										
Border pattern (1-4-2-4) x 4	8			4	4					
(1-3-2-3) x 4		8		4	4					
(1-4-2-4) x 2	4			2	2					
(1-3-2-3) x 4		8		4	4					
(1-4-2-4) x 4	8			4	4					
Center (1-2) x 155				155	155	155	310	300	10	310
Border as above	20	16		18	18	18	72	36	36	72
Edge as above				12	12	12	24	28		28
	40	32		215	215	215	502	428	82	510

In the border section the heddles are reeded 4 to a dent. All ends of floss are carried on harnesses 3 and 4.

Warp plan.
 28 ends Bernat's 40/3 linen warp
 1 end " }
 1 end Bernat's linen floss } x 36
 310 ends " 40/3 linen warp }
 1 end " " " " }
 1 end " Bernat's " floss } x 36
 28 ends " " 40/3 linen warp }
 Total ends, 510

Treadle	Draws down harnesses	Levers on table loom
1	1 & 4	2 & 3
2	2 & 3	1 & 4
3	2 & 4	1 & 3
4	1 & 3	2 & 4

Weaving directions.
 Hem.

	Treadle	Weft
	1 with	40/3
	2 "	"
Repeat for 2 inches, ending with	1 with	40/3
	3 "	"

Border		
First block		
4	with	linen floss
2	"	"
4	"	40/3
2	"	linen floss
4	"	"
2	"	40/3
4	"	linen floss

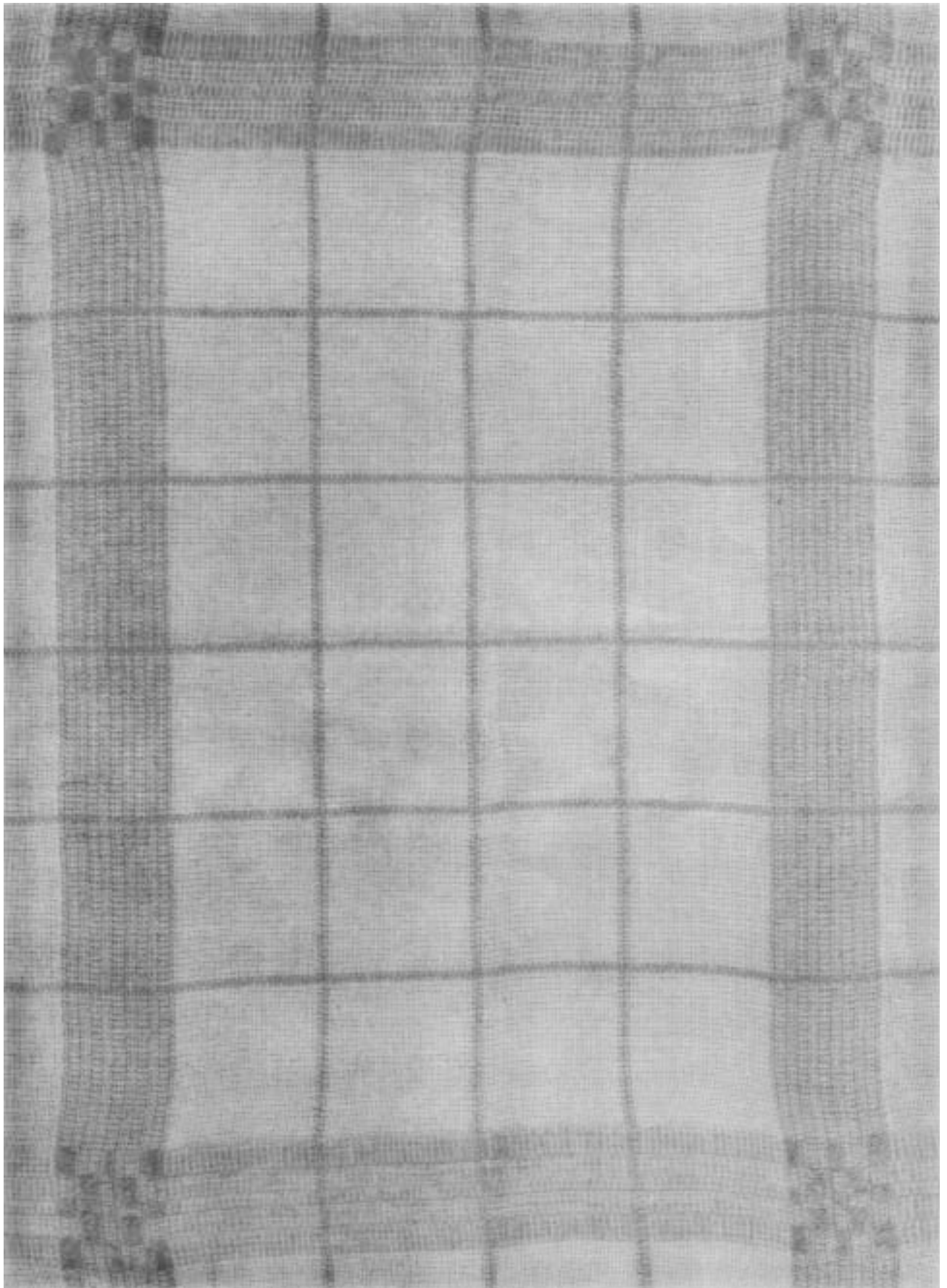
Second block		
3	"	linen floss
1	"	40/3
3	"	linen floss
1	"	"
3	"	40/3
1	"	linen floss
3	"	"
Third block		
4	"	40/3
2	"	linen floss
4	"	"
Fourth block		
3	"	40/3
1	"	linen floss
3	"	"
1	"	40/3
3	"	linen floss
1	"	"
3	"	40/3
Fifth block		
4	"	linen floss
2	"	"
4	"	40/3
2	"	linen floss
4	"	"
2	"	40/3
4	"	linen floss

Center

Using 40/3 linen, begin center with treadle 3, then treadle 2, and thereafter alternate treadles 1 and 2. Weave with 40/3 for one and seven-eighths inches, then weave two picks of linen floss on these tabby treadles. This will complete the first row of center squares. Repeat for two more squares. The fourth line of squares will not be followed by the two picks of floss, as the border will now be woven. As in the hem, throw the last pick on treadle 3 instead of treadle 1. This is to make the floss in the warp floats in the corner blocks begin correctly. Weave a second border as the first. Weave the second hem as the first, using treadles 1 and 2.

If a doiley is preferred plain in the center, instead of being blocked into squares by the two lines of floss, these are easily omitted from both warp and weft, their places being taken by the white warp. They do however, tend to keep the doiley the width of the floss borders, and help prevent pulling in.

The measuring tape to obtain uniformity should be marked, stretched beside a yardstick, 1/4", 2 1/4", 3 3/4", 5 & 5/8", 7 & 5/8", 9 & 5/8", 11 & 5/8", 13 & 1/8", 15 1/4".



Borders – Continued

by MARY M. ATWATER

At some time or other in his weaving career every weaver has the desire to make a piece with a pattern border on all four sides of a plain center. This effect is chiefly desired for linen lunch-cloths and place-mats, bridge-table sets and the like,—and also for window-drapery. Sometimes for shawls and baby-blankets. Just how best to do the thing may present a problem.

On a loom with more than four harnesses the problem is comparatively simple. An overshot pattern, for instance, is threaded in the ordinary way on four harnesses and the pattern for the side borders is set in the warp, arranged to weave in warp-face effect. A two-block pattern such as "Monk's Belt" can be woven this way on six harnesses. A four-block pattern requires eight. A four-harness summer and winter weave pattern may be threaded on one set of four harnesses for the side borders and on another set of four harnesses for the center of the piece. The tie-up may then be so arranged that the pattern weaves all across for the top and bottom borders and weaves across only the side sections for the body of the piece, the center being tied to weave blank or solid in color.

Some time ago I was asked for a simple "Pine-Tree" pattern to weave as a border around a center as plain as possible. The pattern shown on Diagram No. 1 was the result. This pattern appeared first in the Shuttle-Craft Bulletin and was also included in the Shuttle-Craft Recipe Book. It is reproduced here for readers of the *WEAVER*. Many people have enjoyed using it, and the effect is very good when worked out in linens for a table cover, or done in worsted yarns for a small blanket.

However—though the use of multiple-harness looms is on the increase—the majority of hand weavers are still limited to four harnesses, and it will probably be most useful to consider our problem from the four-harness angle.

There are two very simple ways of weaving a border in pattern around a plain center, using a four-harness loom. The first method is to weave the piece in three strips. On the *Structo* 20" loom, for instance, a 40" square lunch-cloth may be made as follows: Thread the pattern in the ordinary manner; weave a strip the full width of the loom, putting in 10" in pattern weaving on each end and weaving 20" of plain tabby for the body of the piece. Now divide the warp at the center, and using two sets of shuttles weave two strips in pattern, 40" long. When the three strips are sewed together the result will be a square cloth 40" each way, with a ten inch border in pattern on all four sides of a 20" square center in plain weave. This is an entirely practical procedure, and the seams show very little,—coming as they do at the edge of the pattern border. If a narrower border is desired,—say an 8" border—weave the center strip as above but weave only eight inches in pattern at the top and bottom. Take out four inches of the threading in the center, leaving eight inches on each side, and weave the side strips as above, but make them 36" long instead of 40". This, of course, wastes a little warp. If preferred the middle strip may be woven and then a special warp the width of the border strips may be set up and the border strips woven separately instead of at

the same time. There is no great saving in weaving time in making the two strips together but there is one advantage—it is certain the strips will match if they are made this way.

While the method described is excellent for table pieces it is not a good way to make some other things, such as window drapery. Curtains in Egyptian cotton scrim with a deep border at the bottom in pattern weaving, a narrow band of pattern weaving at the top, and a pattern border lengthwise along one edge are extremely attractive, especially for a room graced by a hand-woven coverlet. For such pieces: warp in Egyptian cotton 24/3 at a setting of 24 ends to the inch. Weave the bottom border in the usual manner, as deep as desired. Then determine the part of the threading to be used for the side-border. This section of the threading should include a complete figure, and should be set in two inches or so from the edge. With crayon or charcoal darken two threads on each side of the proposed border. Weave the border by carrying the pattern weft back and forth across the border section only, weaving the tabby all across in the ordinary manner. The colored threads serve as a guide in bringing the pattern shuttle up out of the warp and keep the edges of the border even.

This is not in the least difficult to do, and does not take much more time than ordinary weaving. The effect is excellent. Of course a border in this technique may be woven along both edges if desired, though this is a bit more work. Two pattern shuttles are then used, one for each border, and a single tabby shuttle.

This technique may also be used for linen pieces and other things, of course. I once made a very handsome table-cover in blue and natural tussah silks, weaving on opposites, in this style: For the top and bottom borders I treadled as follows: pattern shot, blue; opposite shot, natural; tabby, natural. For the side borders I used two pattern shuttles and treadled the same way, weaving the blue pattern shot across the two borders only, using separate shuttles, and weaving the "opposite" and the tabby shots all across. The result was a border with the pattern in blue against the opposite in natural, and the center showed the opposite pattern in natural against a natural tabby. The effect was quite beautiful.

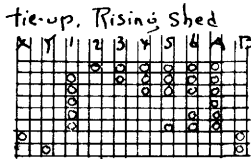
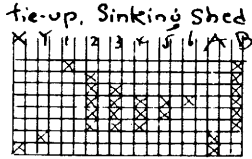
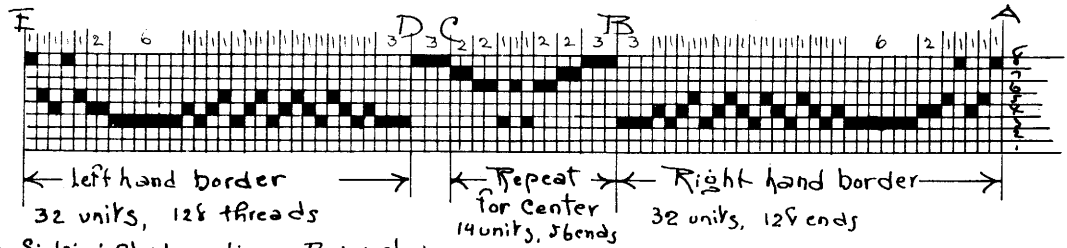
It is necessary, of course, to choose the pattern carefully for these border effects. For pieces woven in the method described first it is important to choose a threading that makes a good corner, and of course this corner pattern should be woven at each end of the side-strips. If the two side-strips are to be woven at the same time it is also important to have a pattern that divides agreeable at the center of the warp. The pattern given on Diagram No. 2 is a modernistic arrangement in crackle weave designed for use on a 20" loom. It illustrates the point I wish to make.

For window drapery in a room with a coverlet, the threading used for the curtains should not repeat exactly the pattern of the coverlet. To use the same threading might result in a painfully "patterny" effect, and moreover as the warp for the curtains is set further apart than for the coverlet, the figures would be larger than the figures in the coverlet,

Diagram No.1

Series V, No. 3

A "Fine-Tree" Design for Linens, - Summer & Winter Wear



Material: Warp #20 line linen, at 36 ends to 1" tabby, like the warp pattern, linen "Weaver", or similar

For a Table-Cover 37" square, warp 1332 ends

thread as follows:

A-B	128 ends
B-D - repeated 10 times	1064 "
C-D	12 "
D-E	128 "
	<hr/> 1332 "

Weave as follows:

Bottom Border

Treadles X-1, once; Y-1, twice; X-1, once (unit a)

" X-2 " Y-2 " X-2 " (unit b)

" X-3 " Y-3 " X-3 " (unit c)

Repeat (a), once; (b), once; (c), twice

Treadles X-4, once; Y-4, twice; X-4, once (unit d)

Repeat six times for Trunk of tree

For the branches treadle the units in the following order, - once each - (c); (d); (c); (b)

(d); (c); (b); (d); (c); (b); (c); (d); (b); (c); (d); (c)

Repeat (d) three times for top of tree.

Square block: unit (a) three times

* Side Borders

Treadles X-6, once; Y-6, twice; X-6, once (unit f)

Repeat twice

Treadles X-5, once; Y-5, twice; X-5, once (unit e)

Repeat twice

(d) once; (e) once; (d) once; (e) twice

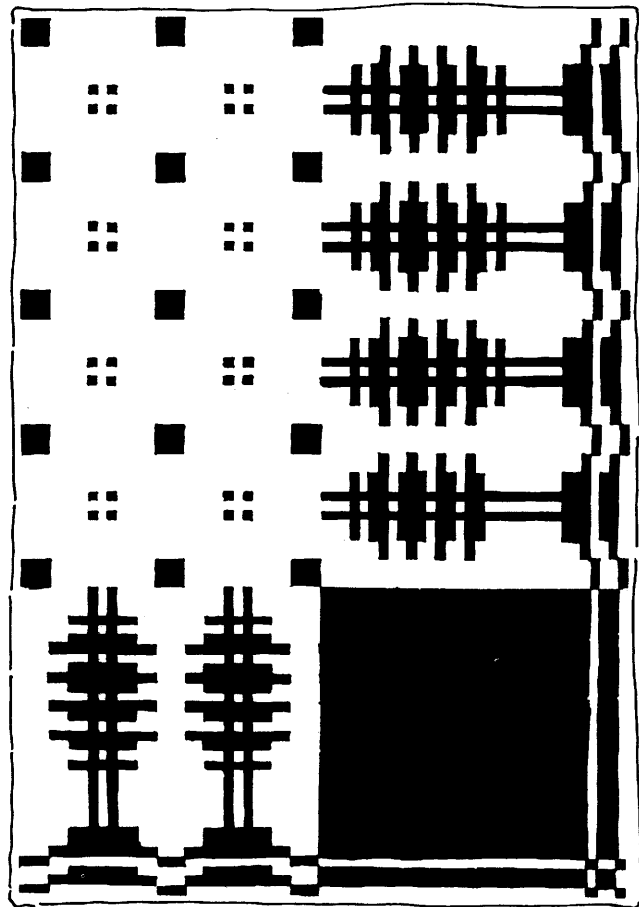
(f) twice; (a) three times

Repeat from * as required for the body of the piece

For the top, repeat the border in reverse.

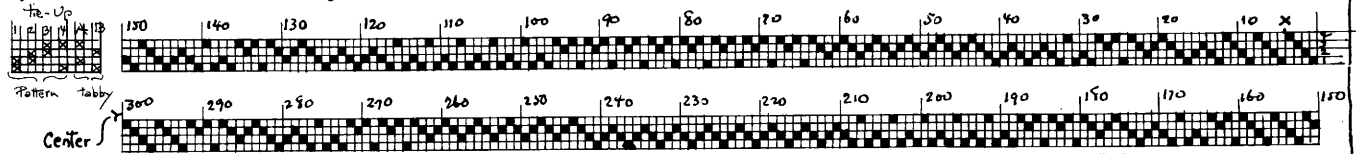
(this pattern may be used for a crib blanket in fine wools, or for a small coverlet.)

M.M. Atwater, Bossin, Mont.



Sketch of Pattern.

Diagram No. 2. "The Whirling Spindle" — a Crackle-Weave Pattern in the Modern Manner, specially designed for the Weaver.

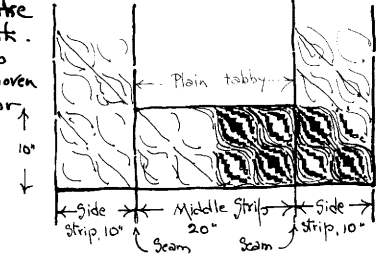


For a 40" Lunch Cloth on the Structo 600 loom: thread the draft as written, and repeat from (x) — omitting first four threads of the draft. End: 1, 2, 3, 4.
For the middle strip, weave as follows:

- Treadle 1, once; 2, once; 3, once; 4, once — repeat four times
- " 1, 3 times; 2, 5 times; 3, 5 times; 4, 5 times
- " 1, 9 " 2, 19 " 3, 29 " 4, 19 "
- " 1, 9 " 2, 5 times; 3, 5 times; 4, 5 times; 1, 5 times
- " 2, once; 3, once; 4, once; 1, once — repeat three times. 2, once
- " 3, 5 times; 4, 5 times; 1, 5 times; 2, 5 times
- " 3, 9 " 4, 19 " 1, 29 " 2, 19 " 3, 9 times
- " 4, 5 " 1, 5 " 2, 5 " 3, 5 " 4, once
- 0, 1, once; 2, once; 3, once; 4, once — repeat twice

(This border should measure 10")
Weave 20" plain tabby; then repeat the pattern as given above, but weave only two repeats of the first four shots and end with line (0) repeated three times.

For the two side strips divide the warp at the center, and — using four shuttles — weave both pieces at the same time, repeating the pattern treadling four times. On the repeats, omit line (0) and end with the first line, repeated three times. Care must be taken to make the side strips match the middle strip exactly in length. It may be found easier to do this if the side strips are woven first and then the strip for the center.



which would be unpleasant. An arrangement made of a small figure from the coverlet pattern usually gives the best results.

Some years ago the Ladies' Home Journal published a double page of color prints showing the "handwoven" room in the White House. Many weavers clipped this sheet at the time and have it in their weaving scrap-books. Those who missed it can probably find it, if interested, in the magazine files of the local public library. I refer to these pictures because they serve better than any number of words to show the unhappy effect of using too much of the same pattern. The pattern used was one of the classic Colonial wheel-figures,—"Sun, Moon and Stars", unless my memory fails me. In this room in the White House the same figure was woven for the coverlet of a large fourposter, for several rugs, for window drapery, etc., all in precisely the same form. The effect of all these hundreds of blue wheels is, in my opinion, extremely distressing. Such a misuse of pattern produces a monotony of decoration that is far worse than a monotony of plainness. Pattern, like color, adds enormously to the joy of life, but like color it must be handled with a certain economy in order to be effective and to give pleasure.

In addition to the two methods of making borders described above, the four-harness weaver has a number of other ways of accomplishing the desired effect—by the use of special weaves. The Scandinavian open work weave, for instance can be used to make a lace-like border all around a plain center. An arrangement of this type is shown on Diagram No. 3—a pattern for linens reproduced from the Shuttle-Craft Guild Recipe Book. This is handsome for a luncheon set, and the same pattern also makes beautiful window drapery. I made curtains once in this weave, using heavy linen floss in "natural" for both warp and weft. The warp was set at 15 to the inch for the plain hem and at 7½ to the inch for the rest of the fabric. The bottom hem was woven at 15 shots to the inch and the rest at 7½ shots to

the inch to correspond with the warp-setting. The effect was excellent, and the curtains, woven some fifteen years ago, are still in use. They do not appear to have deteriorated in the least.

A weave, suitable for border effects for afghan and baby carriage blankets, is shown on Diagram No. 4. Germantown yarn set at 10 to the inch is suitable material.

The Spanish lace-weave can be used for linen pieces, with borders all around,—as elaborate as one chooses. And the Finnish double weave, the "Finnweave", can also be used to produce the desired effect. A simple Finnweave pattern is shown on Diagram No. 5. Directions for this weave were given in THE WEAVER some time ago. For those who missed this issue a leaflet containing the directions and a number of good patterns is available. Price, \$1.00.

It should be noted that in making a piece in Finnweave with a border and a plain center it is advisable to weave a small dot at intervals through the plain part. As in this weave the upper and lower fabrics are entirely separate, unless this is done the large plain spaces tend to become "baggy" in time. If for some reason it is desired to keep the center entirely plain the two fabrics may be woven without catching them together and when the piece has been taken from the loom one of the fabrics over the center may be cut out with scissors and the edges hemmed down.

The Finnweave can be used for coverlets and blankets, heavy drapery, table covers, and so on. I do not advise it for all-linen pieces but it is excellent in cotton, wool, silk, or combinations of these materials. Very free and spirited patterns are possible in this weave.

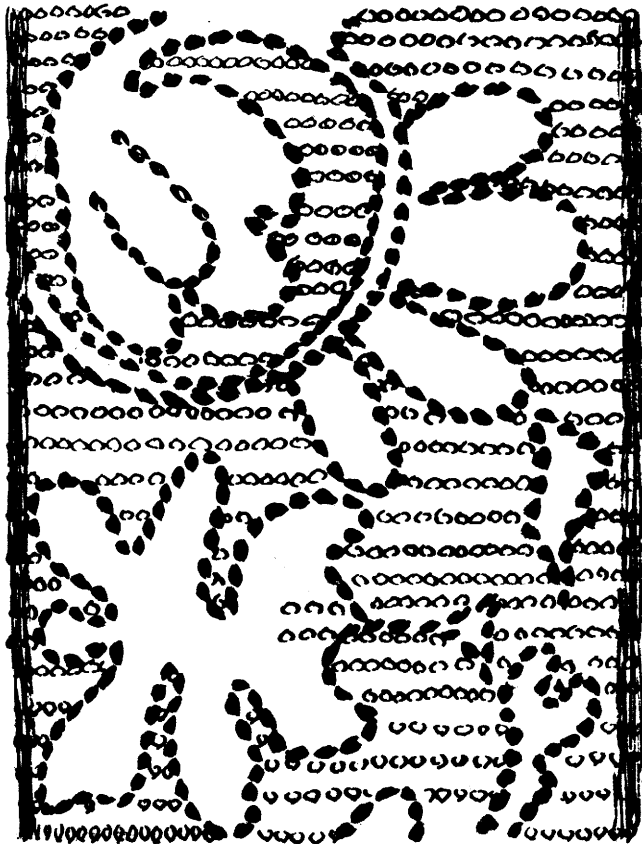
There are, of course, many other ways in which borders may be woven around a plain center, but the methods described above are the ones that seem to me most practical, and the ones that offer the most interesting range of possibilities.

Woven Lace

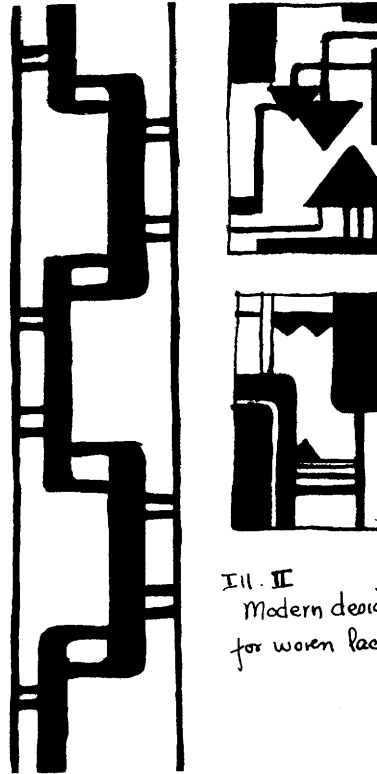
by HELEN LOUISE ALLEN

Looking thru a book on lace one day, I found reference to a "woven lace." This lace was apparently done in the American colonies by the weaver who was skillful with her loom and wished lace for her household linens but did not have the time or know the technique of making bobbin lace.

Later I found that the Metropolitan Museum had a piece of this lace. It is illustrated in "Notes on Laces of the American colonists with plates explanatory of Lace Technique from Antique Laces of the American Collectors" written by Francis Morris and published for the Needle and Bobbin Club. The lace is illustrated on plate 15, no. C, and a description is given on page 4; "From this same district comes a strip of rare hand woven lace of the same technique as the piece in the Leipsic Museum illustrated by Marie Schuette and attributed to the 17th century. This lace, which at first glance has the appearance of buratto, is similarly woven except that the pattern instead of being worked in by needle after the band of open work mesh is completed, is woven at the same time as the mesh itself, the threads of the warp being twisted before the weft threads are passed through them (as in buratto) to form the back ground, and the warp threads left untwisted for straight weaving as in linen cloth, to form the pattern. The



Ill. I Design of old Woven Lace



Ill. II
Modern designs
for woven lace

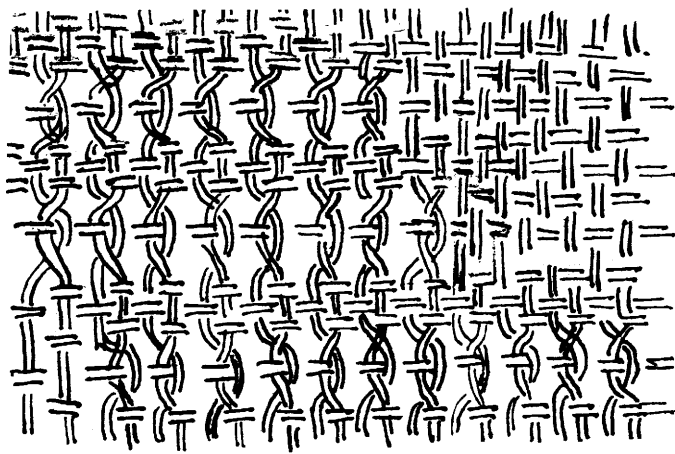
pattern of this piece, unlike that in the Leipsic Museum, is outlined with a thread of untwisted linen floss."

The book referred to in this paragraph is Marie Schuette's *Alte Spitzen*, published in 1914. A drawing of the lace is shown in Ill. I.

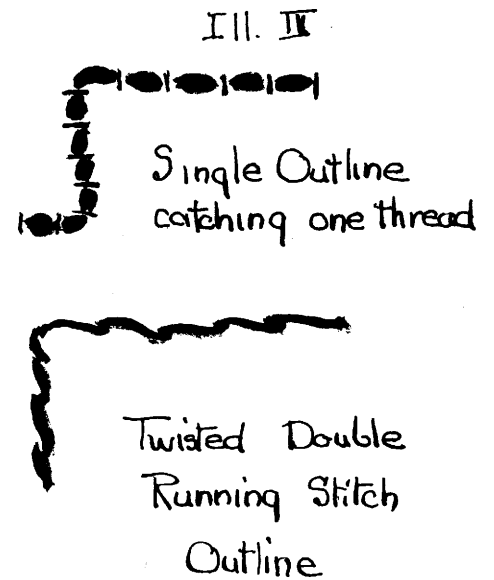
With a magnifying glass I was able to work out the technique of this lace. The main problems encountered were the difficulties of getting just the right weight of thread and the right number of dents to the inch to obtain the correct effect. Linen weaver was much too heavy and did not show up any pattern. My next attempt was spoiled by Egyptian cotton too close together and I had only a warp effect. In order to make it look like lace and for the design to stand out the warp thread must be quite fine and must be so set that an even weave will result. If the threads are too close together, the

background areas will not appear as lacy as desired, and if set too far apart, the plain weave areas do not stand out from the background. Yarns like Umbrian warp, Perle No. 20, or Linen warp 50/2 are suitable for this technique.

The design in the piece in the Metropolitan Museum is floral in character showing a running vine with branching flowers and leaves. Geometric designs can also be used with very good effects Ill. II. One can use the plain areas on the openwork background or the open work as the design on a plain weave background. Diagonal lines or very slightly curved lines are the most successful but vertical lines are also good. Horizontal lines do not show up very well where one is making the pattern in plain and the open background, but they do stand out when open work is used on a plain background. A single line of plain worked vertically looks like a mistake but single lines of open work either diagonally or vertically will show slightly on the plain background. Just a sketched design is more easily handled than one done on squared paper as the design always elongates. One has to draw a short squat design in order to have a square one. But maybe you will be more successful in keeping to your original proportions than I was.



III. III Technique of Woven lace



The loom should be one on which the thread will not slip loose when changing to the next shed. A good stout weaving sword such as the primitive weavers use in beating down their threads is a great help to keep the threads close together. A flat weaving shuttle will do if no "sword" is available.

The loom is threaded in plain weave with a good wide selvage set in. After weaving a heading, the area using the gauze weave is picked up on a flat stick letting the stick run between the regular shed for the plain wave areas. A netting mesh stick is very handy for picking up the threads, or else a pointed flat stick. When all is arranged on the flat stick as desired the stick is turned on edge and the weft thread is put in. A small flat shuttle may be used or a large netting needle. Then three rows of plain weave are put in each row being beaten down closely and firmly. It will spring out enough to show the pattern as one weaves. The next pattern row is then picked up. The three rows of plain weave make this lace weave progress very rapidly. III. III

When the article is finished the design may then be outlined with a heavy soft thread. A plain running stitch catching only a single thread and jumping three or four will make a one sided article, that is, one that has a right and wrong side. A double running stitch is better as then the two sides are alike. The second running stitch is taken going above and then below the previous stitch thus twisting one stitch around the other like a cord. III. IV.

In the modern geometric designs, I do not feel that an outline is necessary, but in a floral design the outline is necessary to give the curved feeling of the petals and leaves. In large areas details may be drawn in with the outline that are not there in the weaving and also bits of the open work may be left not outlined in an article in which the main parts are outlined. If the outline is very heavy and fluffy it might give a three-dimensional effect with other areas left untreated or edged with a thinner thread.

Questions and Answers

by MARY M. ATWATER

Question: What is the best way to use a drawing-in-hook?

Answer: In my opinion the best thing to do with a drawing-in-hook is to throw it away. The quickest and easiest way to thread the warp through the heddles is as follows: If the warp is already in the beam, take up a position on the right-hand side of the loom opposite the ends of the heddle frames. Push the heddles away from you along the frames, to make a working space. With the left hand select the heddle to be threaded and draw it forward; with the right hand select the thread to be threaded. Double the thread over and thrust it through the eye of the heddle as in threading a darning needle.

If the warp is being put on from the front of the loom, thread from the left-hand side of the loom.

In slewing through the reed use an ordinary kitchen knife instead of the hook. The hook sometimes catches in a soft warp, the knife never does.

Question: What are the best materials for a "Colonial" coverlet and how much material is required?

Answer: To answer this question intelligently it is necessary to know what type of coverlet is in question, — what size, what weave. For a coverlet in overshot weaving most people prefer a warp and tabby of Egyptian cotton in "natural," the warp set at 30 ends to the inch. Pattern weft homespun wool yarn or Shetland worsted yarn, in dark blue, or "Colonial" blue, or madder rose, or brown and tan. Bright red is also sometimes used, and black, dark green and light yellow also appear occasionally, in combination with other colors. For a

full-sized coverlet three yards long, and 84" wide—two 42" strips—about 3½ pounds of cotton for warp and tabby will be required, and about 4 pounds of wool yarn for the pattern.

For a coverlet in "summer and winter" weave, same size as above, Egyptian cotton 24/3 may also be used for warp, but the tabby should be a finer cotton, and the pattern weft should be Bernat's "Fabri" or a similar yarn. Quantities: 2 lbs. warp-cotton; 1½ lbs. fine cotton for tabby; 2½ lbs. Fabri yarn, or a similar yarn, for the pattern.

It is not possible to estimate the quantity of weft material with exactness as weavers differ greatly in the matter of beat. A coverlet should be well beaten up and firm.

Question: What kinds of weaving can be done on a two-harness loom?

Answer: Fabrics in plain weave such as linens, dress-fabrics, rugs and so on, in plaid patterns, checks, stripes, the "Log Cabin" pattern, etc., the patterns being produced by various arrangements of colors in warp and weft. Two-block patterns in Swedish "matta," rugs in the "twice-woven" technique, rugs in tufted weaving or Swedish "flossa," in patterns as elaborate as one chooses; linens in Spanish lace-weave; warp-face fabrics with picked up patterns in the primitive manner; tapestry—Swedish type, French type; Kiz-Killim, Navajo rug weaving, etc., etc.. No doubt there are others. More skill is required for most of the two-harness weaves than for simple pattern weaving on four to eight harnesses.

Book Review

"*First Steps In Weaving*" by Ella Victoria Dobbs, for many years, professor of Applied Arts at the University of Missouri, is offered "to those persons, young or otherwise, who wish to gain practical experience in the fascinating processes of weaving but know nothing of its terms, its tools or its procedures." The book is confined to the needs of beginners because other books are available for those who have passed the first stages of the craft. The book is profusely illustrated with photographs of samples of weaving and diagrammatic drawings which illustrate various processes. The directions are so clear and practical that the reader is immediately stimulated to try them out.

The processes outlined include the common weaving frame, the two harness and the four harness looms. Simple directions are given for setting up each type of apparatus, followed by procedures in weaving on each and suggesting pattern vari-

ations. A number of standard threading patterns for the four harness loom are given.

In addition, for the benefit of those unable to purchase a commercial loom, simple directions are given for making one's own out of a goods box, a broom stick, a few old boards, and a little ingenuity.

Emphasis is also given to looms built to hold the warp in a vertical position for convenience in bedside occupations by patients unable to sit up.

Common weaving terms are explained in the order they are met by the beginner and followed by an alphabetized reference list.

The book opens with a brief historical background and closes with usable suggestions for practical weaving projects.

This book is available from Emile Bernat & Sons, Co., Jamaica Plain, Mass. Price \$1.00 per copy.

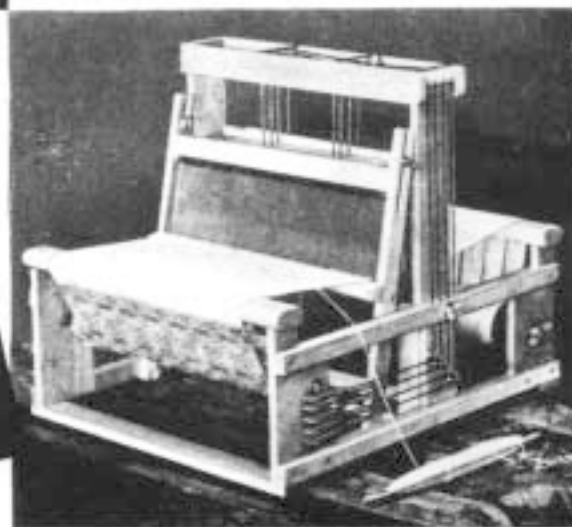
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