

Practical Weaving Suggestions

Vol. 2-57

SOME NOTES ON CRACKLE WEAVE

by Rupert Peters

This Swedish method of weaving was introduced to American weavers by Mrs. Atwater during the first World War. She found the Swedish name, "Jamtlandsvæv," difficult for our tongues and since she saw in the background of woven pieces a resemblance to the crackle of some prized pottery, she gave the name, "Crackle Weave", to it. The weave has been Americanized and is used in ways the Swedes never thought of.

Many weavers fear crackle. After our beginning students have learned the mechanics of weaving they often work at looms which have been set up in weaves for which there has not yet been time for class discussion. One of these carries a crackle pattern and pupils often object to trying it. "Yes, it is good-looking, but it is too hard." In tracing this fear back to its source it arose in practically every case from a comment by a more advanced weaver who was trying to write crackle drafts. It is true that this is often not easy, but the actual weaving is no more difficult than is weaving overshot. If one can weave overshot, she can weave crackle. Both usually are threaded on four harnesses and both use the same tie-up. A shot of tabby alternates with a shot of pattern weft, although each can be woven otherwise for special effects.

But there the similarity ends. Overshot pattern blocks have skips varying from two warp threads to where the skips are over an inch long, fully twice what is allowable. In crackle a 3-thread skip is the rule; if a longer one occurs, it shows up as someone's error. Two-thread skips appear where the pattern changes from one pattern unit to another. The vertical lines of tie-down threads produced when a number of the same treadlings are made to build up a pattern block are one of the characteristics of the

weave. A glance at the attached sample shows that a pattern block is not one solid color, as in overshoot, but it consists of a series of vertical bars of color made by the weft skips, separated by the tie-down lines. This absence of long skips subject to excessive wear means that pattern blocks may be enlarged to any desired size so that this weave lends itself better than any other to modernistic patterns. Both sides are equally usable—it is often a tossup as to which to use. The short skips make a fabric very durable, suitable for upholstery, cushions, bags, and the like, in fact for any use where resistance to wear is a factor. Its characteristic appearance, differing from all other weaves, although resembling summer and winter, makes it attractive for uses where wear-resistance is not such a factor.

In structure the weave is constructed of four basic threading units and, until recently, teachers were not agreed as to what all of these were. This variation in these units, plus the differing devices used for preventing 4-thread skips, was a cause for confusion and made writing crackle drafts a nightmare. During the past two decades a simpler and an orderly organization for the weave has gradually developed. The simplest and most logical summing up of the best thought on the problem is that given by Mrs. Harriet Tidball in her "Handweaver's Instruction Manual," page 28, where she shows each unit as a point twill on three harnesses, Fig. 1. Note also that Unit A starts on harness 1, Unit B on harness 2, Unit C on harness 3, and Unit D on harness 4.

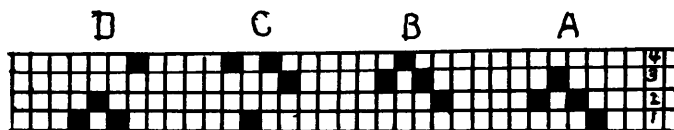


Fig. 1. The four threading units.

Until this conception was established, putting these units in a draft one after the other was a problem and all sorts of irrational methods were used to prevent having 4-thread skips. For example, if Unit B follows Unit A directly we get the situation shown in Fig. 2a. But this cannot be used. As it stands when treadle 2 is used we have a 5-thread skip. To drop one 2 and let the other function in both units as is common in overshoot, Fig.

2b, will not work, it gives a 4-thread skip. Mrs. Tidball gives a simple solution:

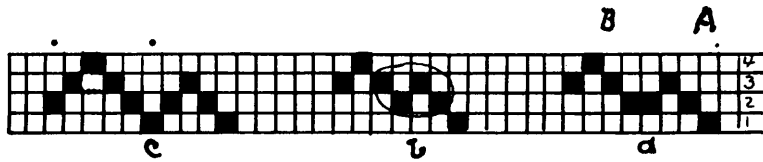


Fig. 2.

at the end of Unit A used alone or of the last one when several are used in succession, put an extra thread, an "incidental" thread, on the harness that carries the first thread of the unit, in this case on harness 1. See Fig. 2c where this incidental thread is marked by a dot above it.

Another cause for inserting incidentals is found when the draft jumps, for example, from Unit A to Unit C. This leaves a break in the tabby sequence between the incidental for Unit A and the beginning of Unit C or, if the reverse is used, between the incidental of Unit C and the beginning of Unit A. An incidental on 2 must be used in either case to restore the sequence. This illustrates the practice of putting in an incidental thread wherever a unit is omitted in the twill sequence of units. That thread is the first thread of the omitted unit.

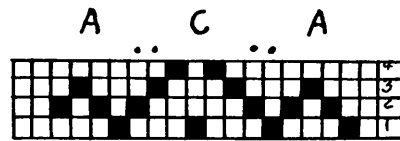


Fig. 3. Two incidentals between units are marked by dots over them.

These simple methods of inserting most incidentals help greatly in removing one of the two points that trouble draft writers. The other is not so easily disposed of. An inspection of the threading units, Fig. 1, shows that when treadle 1 pulls down harnesses 1 and 2, pattern is woven not only where Unit D occurs but also wherever Unit A is found. Likewise treadle 2 weaves upon Units A and B at the same time, treadle 5 upon both Units B and C, and treadle 6 upon Units C and D together. This means that in planning pattern outlines one must carry the two possibilities in mind. Should one forget the second one it will usually bring in some pattern skips where they are not wanted.

Few weavers write original crackle patterns; most use existing ones and modify them for particular uses. In doing this

there are two situations in which most of us have occasion to write crackle drafts: when we analyze a piece of crackle weaving so that we can reproduce it, or when we wish to get the crackle effect for some pattern in another weave for which we have the draft. The latter, transposition into crackle from other weaves, is the easier for most students. Yet in many cases where the transposition has been properly done the results are not pleasing; the complexity of the crackle units has brought in undesired effects that spoil the clear-cut design of the original. One that does work out nicely is the familiar Honeysuckle in overshoot, Fig. 4, and we will use it to illustrate transposition.

To transpose the first step is to mark off the unit groups in the repeat. In overshoot a unit consists of two threads since the shortest skip possible is a 2-thread one and longer skips are multiples of this. The unit groups are marked off by circling them, as is shown in Fig. 5. Note that when a repeat ends and the next one begins a thread is added to the turning unit group, as shown here where the last three threads of the preceding repeat are shown as dots. Working from the right the unit groups are



Fig. 4. Honeysuckle repeat in overshoot.

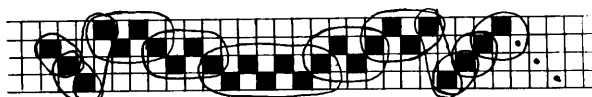


Fig. 5. The overshoot units marked off.

3-4, 1½ units	1-4, 1 unit	1-2, 3½ units	1-4, 1 unit
2-3, 1 unit	3-4, 2 units	2-3, 2 units	1-2, 1 unit
1-2, 1 unit	2-3, 2 units	3-4, 2 units	2-3, 1 unit

There is no such thing as half a crackle unit so that the 1½ units will have to be made either 1 unit or 2 units; the 3½ units will have to be either 3 units or 4 units, whichever gives the best proportions. Here, we will make them 2 units and 4 units respectively.

Next the proper crackle units are substituted for the overshoot ones, placing between them the incidental threads as has been discussed above. Here the units may be matched thus:

For overshoot unit 1 - 2,	use crackle Unit D
2 - 3	Unit A
3 - 4	Unit B
1 - 4	Unit C

Substituted, the result is

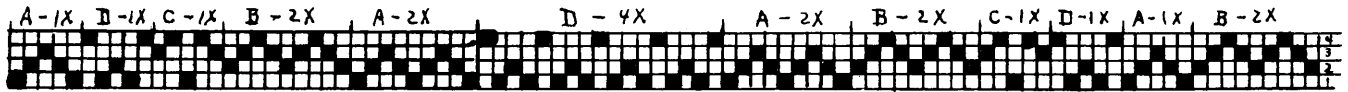


Fig. 6. Honeysuckle draft in crackle.

Due to the larger crackle unit plus the incidental threads, the crackle draft is more than three times as long as in the overshoot original, with a corresponding increase in the size of the resulting pattern.

Until considerable experience has been had in transposing it is well to make a draw down on cross-ruled paper before putting a draft on the loom. This draft worked out as shown in Fig. 7. Since variations in the sett, the tension of the warp, the grist of the weft yarn, and the force of the beat, affect the number of weft shots necessary to square a pattern block, the exact number of such can be only suggested. In general there is much more latitude in this in crackle than in overshoot. The sample pictured was treadled

- 5, 4 times
 - 2, 4 times
 - 1, 4 times
 - 6, 4 times
 - 5, 12 times
 - 2, 12 times
 - 1, 30 times
 - 2, 12 times
 - 5, 12 times
 - 6, 4 times
 - 1, 4 times
 - 2, 4 times
- Repeat as desired.

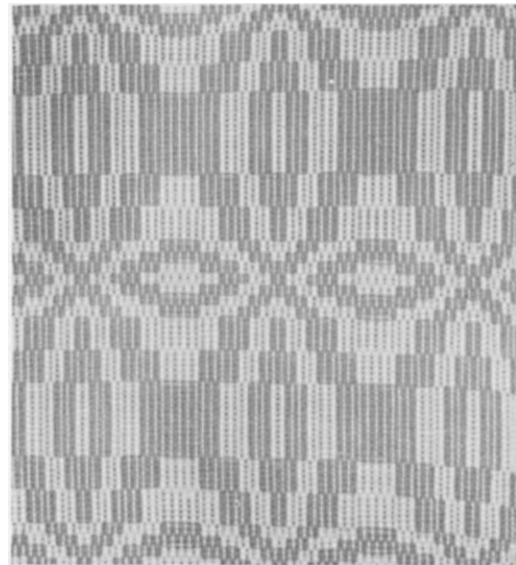


Fig. 7. Honeysuckle pattern in crackle.

Like the overshoot original, a great number of variations are possible in the treadlings. The three following make narrow borders suitable for towels, runners, aprons, etc.

2, 2 times
 6, 2 times
 5, 4 times
 2, 4 times
 1, 6 times
 2, 4 times
 5, 4 times
 6, 2 times
 2, 2 times

2, 2 times
 5, 2 times
 6, 2 times
 1, 4 times
 2, 4 times
 5, 6 times
 2, 4 times
 1, 4 times
 6, 2 times
 5, 2 times
 2, 2 times

1, 2 times
 6, 2 times
 5, 2 times
 2, 2 times
 1, 4 times
 6, 4 times
 5, 6 times
 6, 4 times
 1, 4 times
 2, 2 times
 5, 2 times
 6, 2 times
 1, 2 times

Lily's Article 114, No. 5 Perle was used for weft in this sample with a tabby and warp of Article 314, 20/2 natural.

Analyzing a piece woven in crackle takes more care. One does not have given the sequence of units as in transposing and must choose these to take advantage of the two treadlings in each so that the threading can build pattern on two different rows of design blocks. For an illustration we use a photograph of a piece in crackle taken from Maria Collin's "Vara Hemvavnadar." The pattern is used extensively for upholstery in Sweden.

In Fig. 8 the two lines on the cloth in a vertical position mark off the threading repeat; the two placed horizontally, the treadling repeat. Note in the latter that there are eight horizontal rows of pattern blocks in the repeat. For reference, starting at the bottom, these are numbered I, II, III, etc. Rows III and VII are alike, each having a pattern block starting at the right-hand line. Row III is part of a complete pattern diamond figure so we begin with it. This first pattern block is made up of vertical bars formed

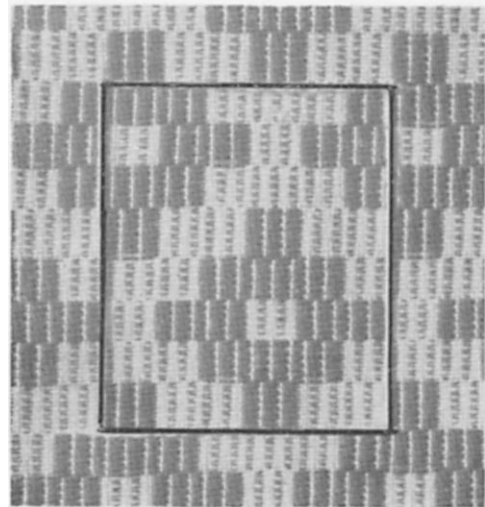


Fig. 8. The piece to be analyzed.

by skips of the pattern weft: two bars of 3-thread skips, one of 2-thread, and two of 3-thread. It is immaterial which crackle unit we use for the start. It is possible here as in overshoot to write four different drafts and, because each is treadled differently, get the same pattern in the cloth from each.

Using Unit D for the start and repeating it twice, we see at once that using treadle 6, the skips over the two 121's will make the first two bars in the pattern block. When the incidental thread is put in on 4, the 14 skip will make the third bar. This 2-thread skip indicates a change to 212 skips for the last two bars in the pattern block. For these, watching the tabby sequence, we can use either Unit C beginning with 3 or Unit A beginning with 1 to follow the 4. The latter is chosen since it will give the necessary skips over 1's and 2's. All five bars in this pattern block must be over such. Two repeats of Unit A plus its incidental thread on harness 1 completes the pattern block, lacking one thread. See Fig. 9.

But now the unit must be changed since there is a square of background at the left of this pattern block. This can be done most easily on Row II or Row IV which are alike. They overlap the last half of this pattern block and this indicates that the blocks in Row IV are made by skips on the other treadling of Unit A, the 2-3 one, and a check of Fig. 9 shows that the first two bars in these pattern blocks are over 232. The final thread in this pattern block on Row III must be a 2, hence the third bar in the block on Row IV must be a 23. Unit B gives this and repeating it three times completes four bars in the block on Row IV, one of 2-thread skips, two of 3-thread skips, and one of 2-thread. Note that the other treadling of Unit B, over 34, gives the three 3-thread-skip bars of the pattern block on Row V. See Fig. 9.

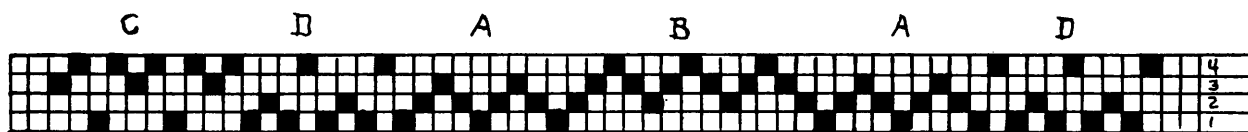


Fig. 9. Threading draft from the analysis of Fig. 8.

Past the background area on Row III, the left half of the pattern diamond is the reverse of the right half, two repeats of Unit A and two of Unit D. Checking shows that this completes the block on Row IV, also the left-hand block on Row III.

There remains the background area at the left on Row III. The 3-bar pattern block above this is the same as the one at the top of the first diamond figure (both are in the same horizontal line). But Row 6 is new. The right end of its pattern block is directly above the left end of the pattern block on Row III, hence, it must use the other treading for Unit D and the skips are over 1 and 4, giving two 3-thread and one 2-thread bars. Unit C also has a 1-4 treading and two repeats of the unit plus the incidental on 3 completes the threading repeat. The pattern block on Row VI is completed by the D units at the beginning of the next repeat of the threading, as may be checked at the right end of the draft.

This detail, tedious at first, soon becomes automatic and is followed much more rapidly than the above can be read. It has been written in an effort to show the why of each unit choice.

For treading, the skips forming the bars in each row are our guide.

- Rows I and V skip over 3's and 4's, treadle 5.
- Rows II and IV pull down 2 and 3, treadle 2.
- Rows III and VII, use 1 and 2, treadle 1.
- Rows VI and VIII, use 1 and 4, treadle 6.

Arranging these in numerical order gives the treading order, 5, 2, 1, 2, 5, 6, 1, 6, as many pattern shots each (with tabby) as are necessary to make vertical and horizontal diameters of the pattern diamonds the same. In the sample this was 10 times for each treadle. Of course, one may vary this to suit, either in the number of pattern shots or by using some other weft yarn.

It probably should have been mentioned earlier that the tie-up is the Scandinavian introduced by Mr. Edward F. Worst. See Fig. 10. If that used by Mrs. Atwater is preferred, simply change the treadle numbers in these drafts as follows: the 5's to 3's, the 6's to 4's, and the tabby to A and B. If one has a four - treadle loom, press down together 1 and 2 where treadle 1 is indicated; 2 and 3, for treadle 2; 3 and 4, for treadle 5; and 1 and 4, for treadle 6. For Structo and similar looms pull levers 3 and 4 for treadle 1, 1 and 4 for treadle 2, 1 and 2 for treadle 5, and 2 and 3 for treadle 6.

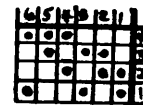


Fig. 10
The tie-up

A few patterns that we have found popular follow. In all save the sample, Lily's Article 314, 20/2 natural, set 30 to the inch, was used for warp and tabby. The weft was their Art. 114, No. 5 Perle, color 440; for many uses some other color would be better.

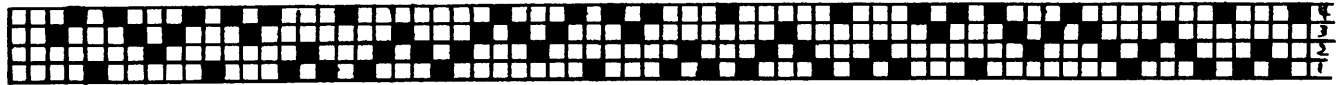


Fig. 11

Fig. 11 is a simple Goose Eye pattern that can be used in many cases where an all-over pattern is desired. Note two treadlings shown in the photo. For the one with the smaller center, treadle 2, 1, 6, 5, 2, 1, 2, 5, 6, 1, 2, 5. For the larger center treadle 2, 1, 6, 5, 2, 1, 6, 1, 2, 5, 6, 1, 2, 5, 6, 5. Use shots enough in each case to make the diamond diameters, vertically and horizontally, the same. In the sample each was treadled 4 times.

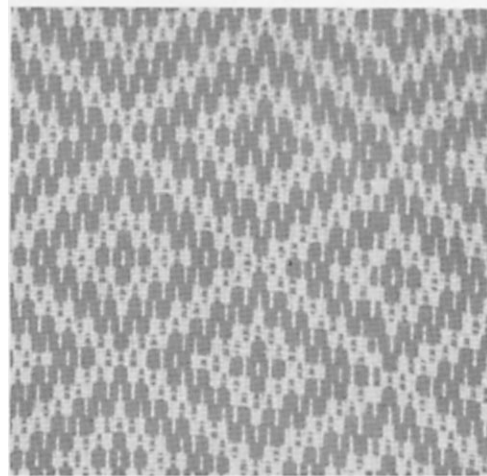


Fig. 11 Goose Eye Pattern

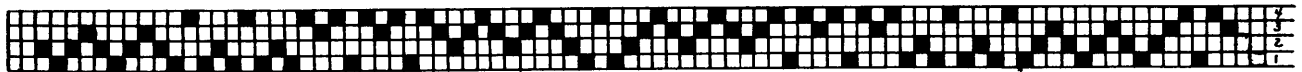


Fig. 12

Fig. 12, a diamond, can be used in the same way but is more versatile. It is used also for bags, towel and runner borders, and has special treadlings. The over-all treadling is:

6, 2 times	5, 5 times	5, 5 times
2, 5 times	2, 5 times	6, 5 times
1, 5 times	6, 2 times	1, 5 times
6, 5 times	2, 5 times	2, 5 times

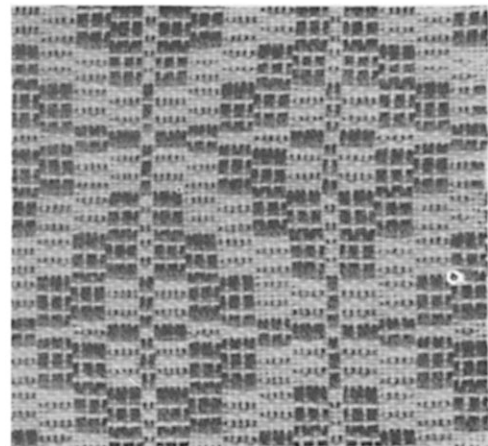


Fig. 12. A Diamond Pattern

A wide border (seven inches) that is entirely different may be treadled:

1, 2 times	2, 8 times	6, 2 times
5, 8 times	5, 8 times	2, 4 times
6, 8 times	6, 8 times	6, 2 times
1, 8 times	1, 8 times	2, 12 times
	2, 8 times	(Center, reverse to beginning starting with 6, 2 times).

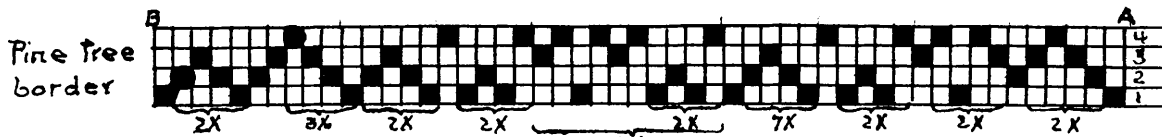


Fig. 13. Draft

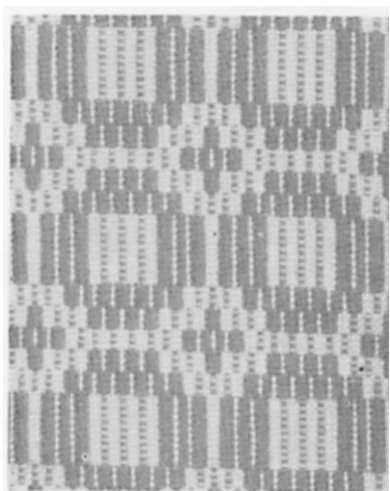


Fig. 13. Isles of the Sea

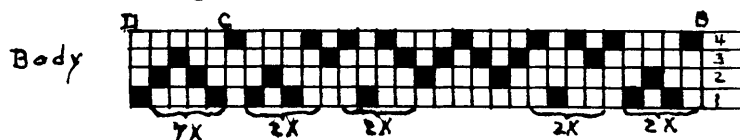


Fig. 13, Isles of the Sea, was brought to Penland by Mr. Worst back in the '30's and has been popular in one form or another ever since, chiefly for bags, pillow tops, and upholstery. Pillow tops are usually woven with a pine tree border, A-B in Mr. Worst's draft. The body, B-D, is then repeated to the desired width, ending the last time at C, then the border in reverse. Treadling for the border is

1, 4 times	
6, 4 times	
5, 4 times	
2, repeat to form a square	
5, 4 times)	3 times
6, 4 times)	
5, 4 times	
2, 8 times	
6, 1 time)	3 times
2, 1 time)	
2, 8 times	

For the body, 5, 4 times	
6, 6 times)	Make arms of
1, 6 times)	white cross
6, 6 times)	equal.
5, 4 times	
2, repeat to form a square	
(Omit this square on the last repeat).	

Fig. 14. Draft

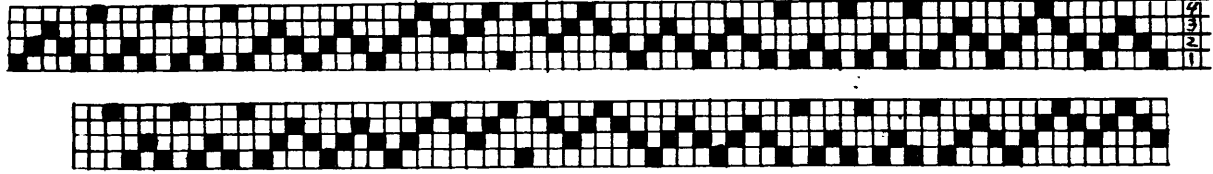


Fig. 14 is adapted from one of Mrs. Bergman's patterns. It is used for bags, mats, and runners. Two treadlings follow:

- | | |
|------------|-------------|
| 5, 8 times | 5, 8 times |
| 2, 4 times | 2, 12 times |
| 5, 8 times | 5, 8 times |
| 6, 8 times | 6, 8 times |
| 1, 4 times | 1, 12 times |
| 6, 8 times | 6, 8 times |

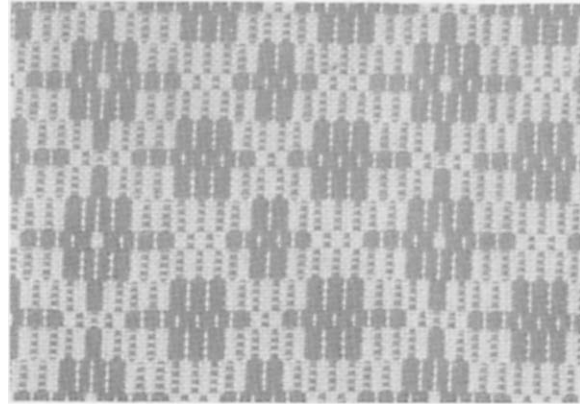


Fig. 14. Adaptation of Bergman Pattern

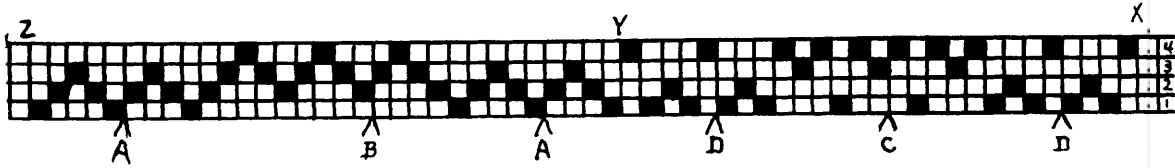


Fig. 15. Draft

Fig. 15 is a Swedish upholstery pattern found in Alexander Berger's booklet. The pattern figure may be enlarged by inserting 4-thread units as indicated by the unit letters below the draft. If this is done added pattern shots must be added to make the height of the cross equal to its added width. Treadle 5, 6, 5, 2, about 14 weft threads upon each.

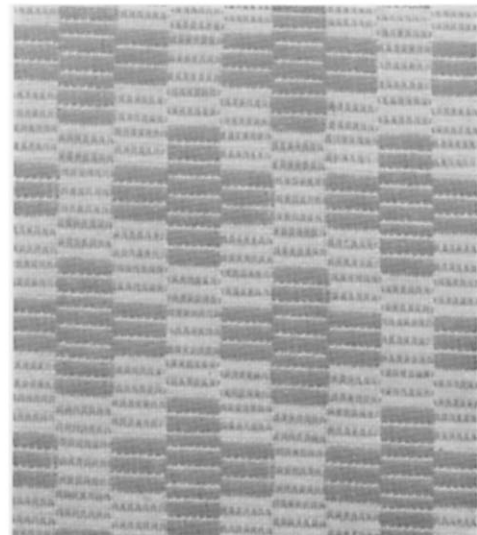


Fig. 15. Berger's Upholstery Pattern

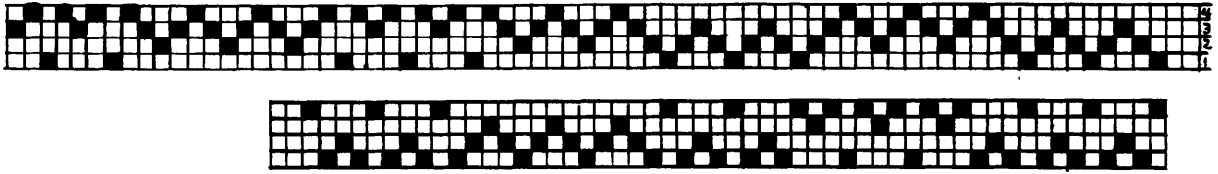
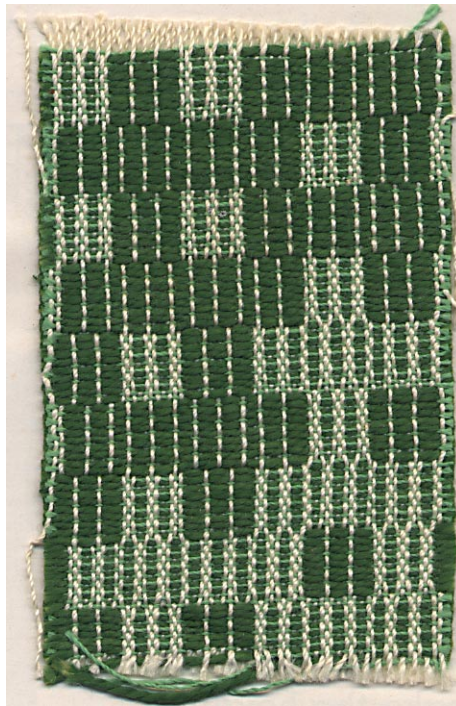


Fig. 16. Draft for Rhythm Pattern.

The woven sample, Fig. 16, is from a pattern, "Rhythm," brought to us ten or twelve years ago by Heather Thorpe. It is a simple modernistic design suitable for upholstery. The sample is given, not to show the pattern, but to show the characteristic appearance of a piece woven in crackle, its two faces, the weight when No. 5 Perle is used, etc. The warp and tabby are Lily's Article 314, both 20/2. The warp is natural and the tabby color 767. This color was chosen to reduce the contrast since the room was papered with a contrasting modernistic paper. Pattern weft is Article 114, No. 5 Perle, color 1453. Treadling is 1, 2, 1, 2, 5, 2, 5, 6, 5, 6, 1, 6, putting nine or ten pattern shots upon each.

SAMPLE OF
RHYTHM PATTERN



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