

"Summer-and-Winter" Weave on Six Harnesses

by MARY M. ATWATER

If someone were to ask me, "What do you think is the most interesting weave for six harnesses?" I should answer without hesitation, "The 'summer-and-winter' weave."

This weave is not limited to six harnesses, of course. The elaborate patterns of more than four blocks require more than six, and simple two-block patterns may be woven on four harnesses. However the majority of our traditional patterns are composed of four blocks, and all these are within the scope of the six-harness weaver.

"What is the history of the weave? and why the name?" one may ask. There are no records to show who first hit upon this method of weaving, but from evidences at hand it appears to have been an American weaver of the pre-revolutionary period, in Pennsylvania. The weave appears to be peculiar to our own country, and all the old pieces still extant, whose history can be traced, appear to have originated in Pennsylvania or one of the bordering states.

When I first became interested in hand-weaving, a good many years ago in the early days of the revival, the summer-and-winter weave was considered a "lost art." The Swedish weavers, who were the only skilled teachers available at that time, knew nothing of it. It was unknown to the mountain weavers of the south among whom weaving had been kept alive through the years. "Weaver Rose," the bare-footed Rhode Island eccentric in whose weaving loft the old art lived through the days of neglect, knew only "four-harness overshot."

There were, however, a number of fine old coverlets and scraps of weaving still extant that showed the interesting structure and texture of the "summer-and-winter" weave. It was not very difficult to unravel from these the simple secret of the technique, and some time later I was fortunate enough to find in an old manuscript weaving book, preserved in the fine collection of the Pennsylvania Museum of Art, some odd drafts labeled "Summer-and-

Winter" that referred unmistakably to this weave. It gave me great satisfaction, I need hardly say, to find that these drafts were written in a special notation, similar to the form of notation I had already devised for my own use.

The summer-and-winter weave is now a familiar technique to most hand-weavers, and if the old-time craftsman who devised the weave is aware—in the place to which all good craftsmen go—of terrestrial matters, he must, I think, find satisfaction in the popularity of his invention.

What is the origin of the name? This, of course, can only be a matter of guess-work. The weaver who devised the weave may also have named it, or the name may have been the inspiration of someone else. Possibly the fact that a piece woven in this manner is usually dark on one side and light on the other, may have seemed to some fanciful person to suggest the seasonal changes. The name refers to the "weave," be it observed, and not to a particular "pattern."

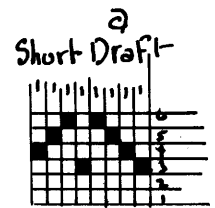
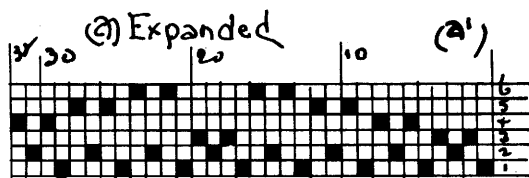
The reasons for the popularity of the summer-and-winter weave are many. Here are a few of them: The fabric produced is a closely combined fabric without long skips or "floats" of weft, and for this reason has wearing qualities greatly superior to those of the familiar "overshot" weave. Moreover the fabric is a "double-faced" fabric, as handsome on one side as on the other. It is not the same on both sides, however; the figure appears dark on light on one side, and light on dark on the reverse. Either side, however, may be considered the "right" side. Another interesting consideration is the greater freedom in the matter of design permitted by the summer-and-winter weave. In overshot weaving the size of a pattern block is limited to the longest skip that can be woven without weakening the fabric too greatly. This makes the largest block rarely more than an inch across. In the summer-and-winter weave this limitation does not exist and blocks may be as large as one pleases. Moreover, in

Diagram One

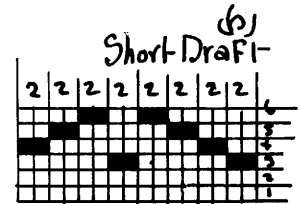
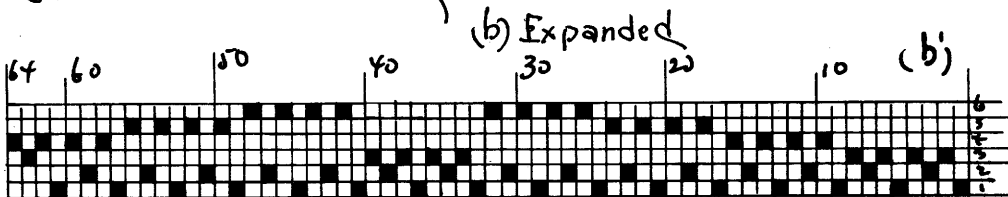
Simple "Diamond" Pattern

(a). Single units

(b) Two units to each block



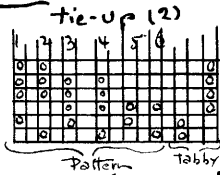
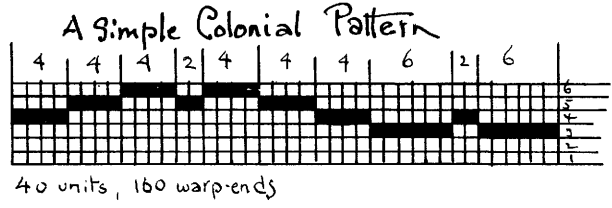
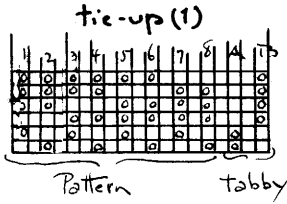
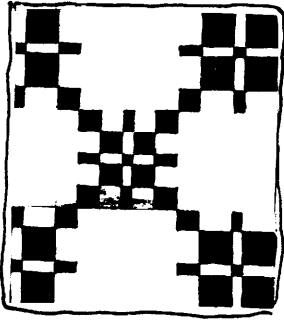
8 units, 32 ends



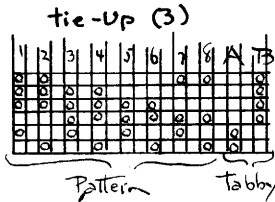
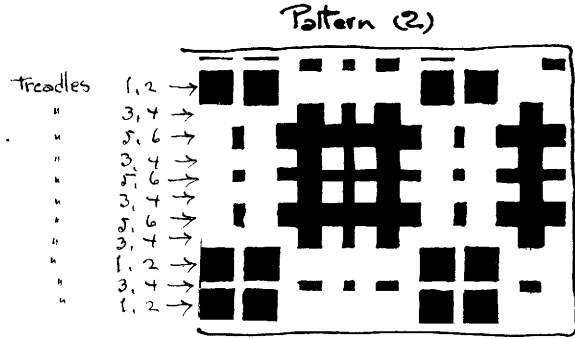
16 units, 64 ends

Pattern (1)

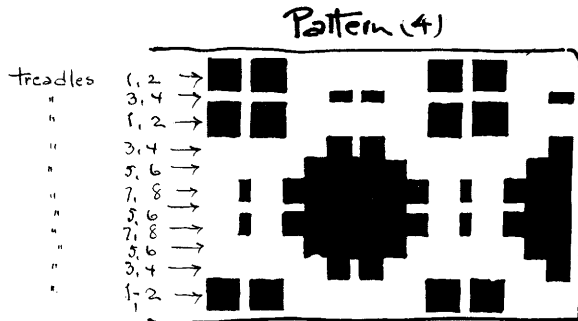
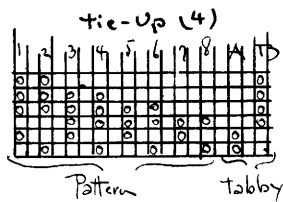
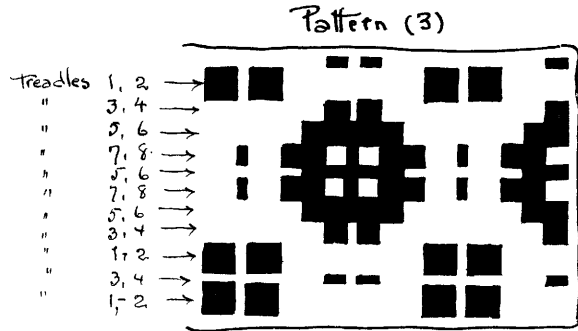
Diagram Two



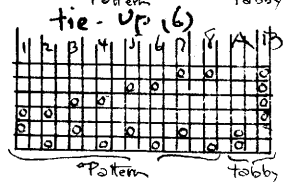
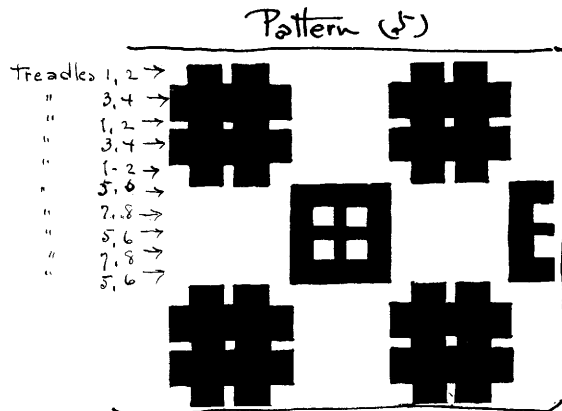
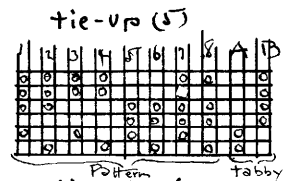
Pattern (2) is woven with only three changes of block, so only six pattern treadles are required



It will be noted that (3) and (4) are alike in tie-up except for a single knot each on treadles 7 and 8. Both patterns are treadled the same.



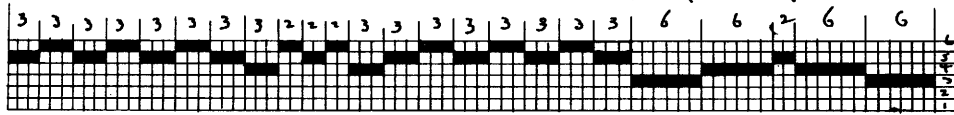
The patterns are stretched as when woven in a single color. But interesting effects may be produced by wearing in several colors.



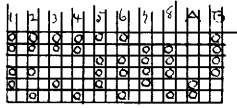
M. M. Atwater, 1937

Diagram Three

Pattern #46, from the "Speck" Drawings

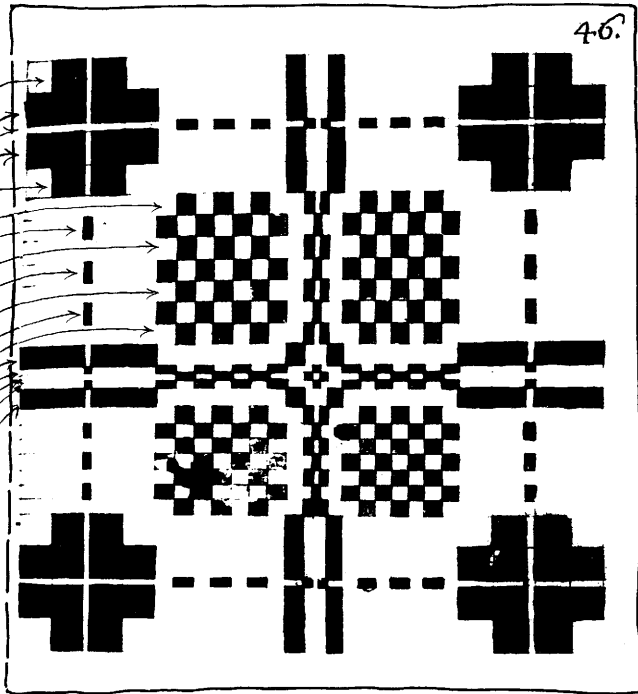


80 units. 320 warp-ends



Weave on treadles

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
A	3	4	7	5	7	5	7	5	7	5	7	5	7	5
B	3	4	7	5	7	5	7	5	7	5	7	5	7	5
C	3	4	7	5	7	5	7	5	7	5	7	5	7	5
D	3	4	7	5	7	5	7	5	7	5	7	5	7	5
E	3	4	7	5	7	5	7	5	7	5	7	5	7	5
F	3	4	7	5	7	5	7	5	7	5	7	5	7	5
G	3	4	7	5	7	5	7	5	7	5	7	5	7	5
H	3	4	7	5	7	5	7	5	7	5	7	5	7	5
I	3	4	7	5	7	5	7	5	7	5	7	5	7	5
J	3	4	7	5	7	5	7	5	7	5	7	5	7	5
K	3	4	7	5	7	5	7	5	7	5	7	5	7	5
L	3	4	7	5	7	5	7	5	7	5	7	5	7	5
M	3	4	7	5	7	5	7	5	7	5	7	5	7	5
N	3	4	7	5	7	5	7	5	7	5	7	5	7	5
O	3	4	7	5	7	5	7	5	7	5	7	5	7	5
P	3	4	7	5	7	5	7	5	7	5	7	5	7	5
Q	3	4	7	5	7	5	7	5	7	5	7	5	7	5
R	3	4	7	5	7	5	7	5	7	5	7	5	7	5
S	3	4	7	5	7	5	7	5	7	5	7	5	7	5



this weave several blocks may be woven at the same time, blocks may overlap, and if one likes one may weave different parts of the figure in different colors.

These advantages are obvious, and the summer-and-winter weave is largely superceding the "four-harness overshot." In the first days of the hand-weaving revival the overshot weave was the only pattern weave known to us, and we used it for rugs, upholstery fabrics and other things for which it is not well suited. The old-time weavers used the overshot weave almost exclusively for coverlets and this remains the best use for it. There are other weaves that are more practical and handsomer for other things. Our technical knowledge of weaving has greatly broadened during the last several years.

The summer-and-winter weave, because it is so logical in structure, is far easier to thread and to check and also to weave than the four-harness overshot, — but due to the fact that it employs a special form of notation weavers sometimes find it confusing at first. I shall try to make the matter of the drafts as clear as possible.

The summer-and-winter weave is constructed on the following principle: two harnesses are used to produce the weave itself, and the remaining harnesses are used for the pattern — one harness being required for each "block" or change in the pattern. A "unit" of the weave consists of four threads: the first thread on one of the "tie" or weave harnesses; the second on the pattern harness; the third on the second tie-harness and the fourth on the

pattern harness again. This is uniform for the entire threading, no matter what the pattern and no matter how many harnesses are involved. Half the warp, it will be seen, is threaded on the two tie-harnesses and the other half of the warp is distributed among the pattern harnesses according to the figure of the pattern. It is therefore possible to write the draft by units instead of setting down each individual thread, as in drafts for overshot weaving. The position of the blocked in space of the draft indicates the pattern harness involved, the threading of the tie-harnesses being always the same may be taken for granted.

Diagram One illustrates this system of notation. At (a) is given the so-called "short draft" of a simple diamond pattern, written with single units, and at (a') is given the corresponding expanded draft in which each thread is shown, after the manner of a draft for overshot weaving. At (b) is given the same pattern written with two units to each block and at (b') the corresponding expanded form. The pattern might be written with

three or ten, or twenty units to the block.

The "short draft" is the notation ordinarily used. Both drafts mean exactly the same thing, but it is far easier to thread from the short draft than from the expanded form as anyone will discover on experiment.

As a rule the two front harnesses are the ones used to carry the weave, though some weavers prefer to use the two back-harnesses. It makes no difference whatever in the result which system is used, and either method of threading may be followed from the short draft.

People sometimes find the tie-up for summer-and-winter weaving a bit puzzling. This is, I think, due chiefly to the fact that so many different tie-ups are possible. Each tie-up produces a somewhat different figure on each threading, so that one may vary the pattern by a change in the tie-up as well as by variations in treadeling.

Diagram Two illustrates tie-up. The threading draft given is for a simple figure much used in Colonial patterns. The tie-up at (1) weaves the pattern blocks separately, without overlapping. If this draft is woven, "as drawn in" on tie-up (1) we get the rather uninteresting little figure illustrated. The tie-up at (1) however, may be considered the "standard" tie-up, and is used for all patterns in which the blocks are woven without overlapping. The

other illustrations on the diagram show a few of the variations that may be made by changing the tie-up and treadling. Of course many other variations are possible on this same threading, but these figures illustrate the method of altering the figure. The special tie-ups are given for each figure and the treadles to be used in weaving each block of the pattern are indicated along the margin of the drawing.

As most six-harness looms are operated on the "Rising shed" principle the tie-up drafts show the "raising" ties. Two treadles are required for each pattern block, with two additional treadles for the tabby.

In weaving, pattern shots alternate with tabby shots as in "overshot." Four pattern shots and four tabby shots are woven for each "unit" of the weave, and it follows that materials must be carefully chosen to give a properly proportioned figure. If the weft is too coarse for the warp the figure will be distorted lengthwise, and if the weft is too fine the figures will be squatty. It is not possible to give a rule that will apply to all combinations of material, but in a general way the warp and the pattern weft should not be very far apart in grist, and the tabby should be finer than the warp. Two combinations that have proved satisfactory are: Warp, Egyptian cotton 24/3, set at 30 ends to the inch; pattern weft, Bernat's "Fabri" or other 15/2 yarn; tabby #20 perle cotton or a 20/2 ordinary cotton. Or: Warp; #10 perle cotton or a 10/2 ordinary cotton, set at 24 ends to the inch; pattern weft, homespun or Shetland yarn; tabby, Egyptian cotton 24/3 or material of similar grist.

When a very coarse weft is used as in rug-making, two pattern shots are used for each unit of the weave instead of four. Otherwise a very coarse warp may be used, set very far apart, in place of the ordinary carpet warp at a setting of 12 to the inch, as is ordinarily used.

There are two principal systems of treadling employed in the summer-and-winter weave, known respectively as weaving "one and one," or weaving "in pairs." Both systems produce the same pattern—the difference is in the effect of the background.

Suppose, for instance, we wish to weave the first block of pattern (1), Diagram Two, by the one-and-one method. The treadling for the first unit of the weave is as follows: Tabby A, (using tie-up (1) of course)

Treadle 1, pattern weft

Tabby B

Treadle 2, pattern weft.

Repeat.

To square the first block of the figure, which is of six units, repeat the treadling for the first unit six times, or the four shots as written twelve times. To weave the block "in pairs" treadle as follows:

Tabby A,

Treadle 1, pattern

Tabby B

Tabby A

Treadle 2, pattern

Tabby B

Treadle 2, pattern

Treadle 1, pattern

To square the block repeat this treadling six times. When repeated, of course two shots on treadle 1 come together (with tabby A between) where the treadling starts over. This is correct. The pattern shots for the complete block are:

Treadle 1, once

" 2, twice

" 1, "

" 2, "

" 1, "

" 2, "

" 1, "

Treadle 2, twice

" 1, "

" 2, "

" 1, "

" 2, "

" 1, once

This system is followed throughout the weaving. It will be seen that each block begins and ends with a single shot on the first of the two pattern treadles used for the block, the rest of the pattern shots being woven two and two or "in pairs."

It should be observed that the "A" tabby should be woven between pairs as indicated above, and the "B" tabby between un-pairs. The opposite arrangement produces a less handsome background effect.

Summer-and-winter weave patterns may be woven "on opposites" if desired. This, however, requires a more elaborate tie-up, with four treadles for each pattern block. The effect is interesting in the same way that weaving an overshot pattern on opposites is interesting. Space does not permit describing this in detail but weavers should find no great difficulty in figuring it out.

To weave different parts of the figure in different colors the most practical tie-up is tie-up No. 6 as given on Diagram Two. Each treadle raises a single harness, and to produce the desired sheds the weaver uses several treadles at the same time, as may be required. There is a bit of acrobatics about this, but no loom is provided with enough treadles for a complete tie-up. In weaving, a shot of each color is woven between tabby shots.

I have never seen an ancient piece woven in several colors in this manner, but some of the drawings in the old "Speck" book suggest the effect, and the technique holds delightful possibilities. For upholstery and for bags and such pieces it is particularly good.

Diagram Three gives the threading and tie-up for one of the patterns from the "Speck" book, — an old book of weaving designs in manuscript, preserved in the Pennsylvania Museum. The treadling is indicated for each block along the margin of the pattern. Patterns in summer-and-winter weave are more easily followed from a drawing of the figure than from tabulated treadlings, which are apt to be lengthy and confusing.

A great many six-harness summer-and-winter weave patterns have been published, and for further patterns the reader may be referred to my Shuttle-Craft Book of American Hand-Weaving, obtainable from the Bernat Company, price \$3.50.