

# Patterns for Six-Harness Weavers

BY MARY M. ATWATER

THE WEAVER who has just invested in a six-harness loom is sometimes at a loss for suitable patterns, as most weaving patterns seem to be written for either four or eight harnesses.

Naturally the six-harness weaver wishes to do something that could not be done on the simpler four-harness loom, and is anxious to explore the new possibilities. Just what are the six-harness possibilities?

To answer this question fully would require the dimensions of a book rather than of a magazine article, but it may be useful to list a few of the more interesting six-harness weaves. First there are the "fabric" weaves — the small threadings designed to produce effects of texture rather than pattern figures. Such weaves are used for dress fabrics, coat fabrics, blankets, linen towelling, upholstery and drapery fabrics, and so on. These small weaves are of particular interest at present as so many hand-weavers are going in for "yardage."

Then there is the familiar overshot weave. What happens when one puts the overshot weave on six harnesses instead of on four? It becomes at once much more varied and interesting. For instance, people have frequently asked me how best to weave a plain tabby border all around a piece in pattern weaving. This is a difficult and somewhat troublesome thing to do on four harnesses, but with six? — nothing could be simpler. One merely threads the side borders on the extra harnesses, threading the pattern in the familiar way on the other four.

On four harnesses the overshot patterns are limited to four "blocks" or changes of pattern shed, but on six harnesses we make six-block patterns. These have an entirely different effect from four-block patterns and lend themselves to some novel arrangements. And there is the weave "on opposites" which is usually considered an eight-harness weave but can be woven exactly as well on six as on eight harnesses.

Then, too, there are the patterns in "Bronson weave" or "spot weaving." Of all the old weaves for linens this one appears to have been most popular with Colonial weavers, and it deserves more attention than it has been receiving from modern weavers. There are a few very simple patterns in this weave that can be made on a four-harness loom, but on six harnesses a far greater variety of patterns in this weave becomes possible. The same is true of the openwork or "mock leno" weave which is so closely related to the Bronson weave.

Perhaps the most interesting six-harness weave, however, is the beautiful "Summer-and-Winter" weave. On four harnesses only simple two-block patterns may be woven in this weave, but on six harnesses we can make patterns of four blocks, among which are many of the most beautiful classic patterns. The fabric produced by the Summer-and-Winter technique is very firm and handsome, and has wearing qualities far superior to the overshot weave with its loose "floats" or "skips" of pattern weft. It is an ideal weave

for upholstery and drapery and all the decorative fabrics that show a clear design.

There are also a number of minor weaves that are particularly handsome when done on six instead of on four harnesses. The Scandinavian three-harness weave, for instance, and the familiar "Ms and Os" used so much for linens.

It will be apparent from this list that the six-harness possibilities are practically unlimited.

As it is impossible within the limits of a magazine article to include all these weaves, I am confining myself to the patterns of the "fabric" type, for which there appears to be a special demand. A number of threadings of this order are given on the diagram, but of course these are only a few of the many, many patterns available.

The plain twill, on four harnesses, is just twill — and though it may be woven in a few variations it is not the most exciting weave in the world. On six harnesses the plain twill gives a great variety of effects. Most of the special tie-ups shown on the diagram may be used in weaving the simple threading at (a), and a great number of texture effects is possible. Of course there are many ways of making the tie-up for this weave in addition to those shown.

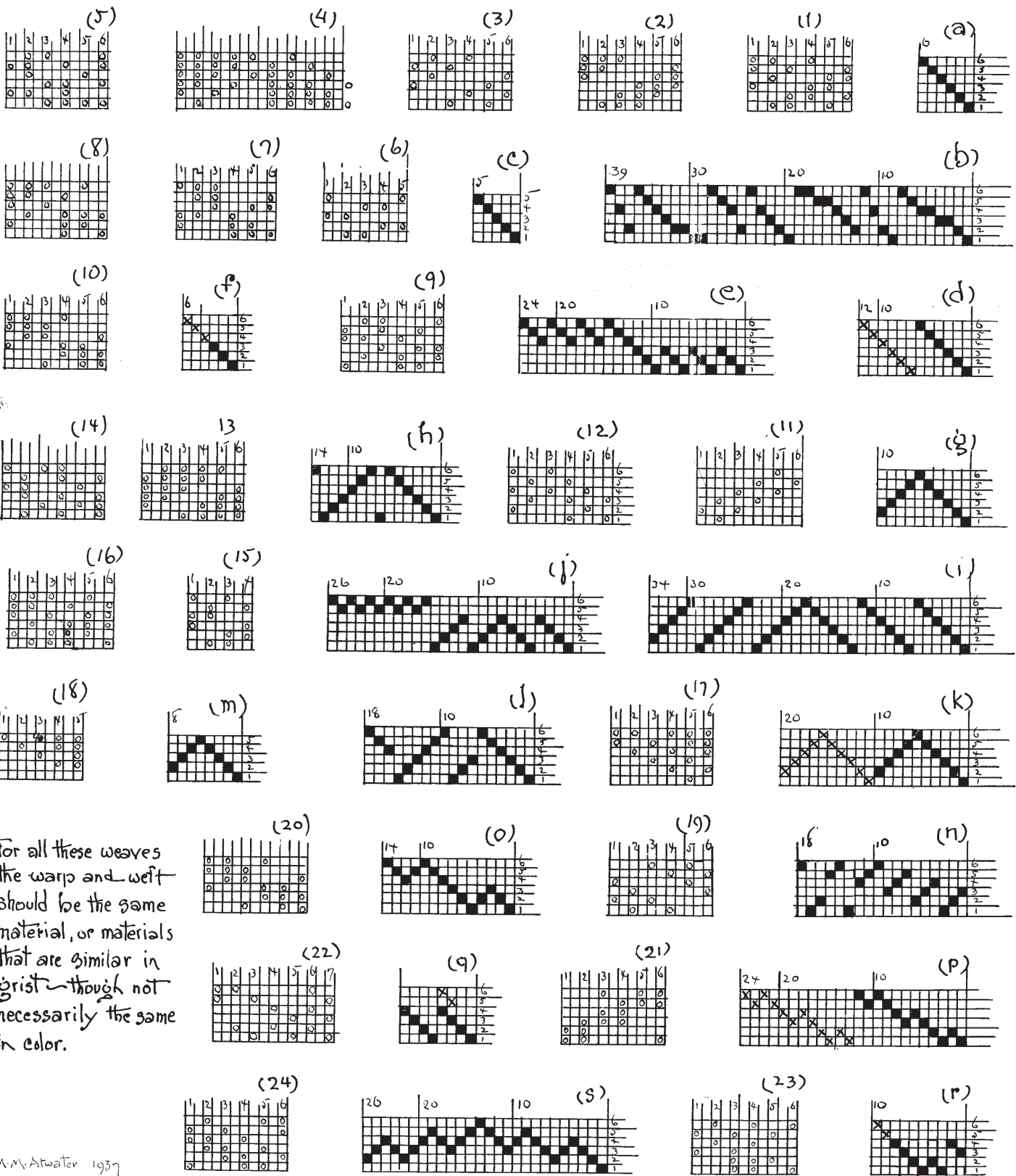
The twill weaves are most satisfactory when warp and weft are of the same material, or of materials similar in grist, though they need not be of the same color. Warp and weft play the same part in the result, and in weaving one should be careful to lay the same number of weft-shots to the inch as there are warp-ends to the inch in the warp-setting. No tabby is used.

The twill and its variations are particularly useful for tweeds, coat fabrics, sweater fabrics, blankets, and a few of them for linens. Treadle: 1, 2, 3, 4, 5, 6, one shot on each shed, and repeat. Or weave the treadles in reverse order: 6, 5, 4, 3, 2, 1, and repeat, which makes the diagonal ribs — characteristic of the twill weave — slant in the opposite direction.

Tie-up Nos. 1 and 2, weave conventional twill patterns; No. 2 is the plain over three, under three plan of weave, and makes a heavier, softer fabric than No. 1. The fabric is the same on both sides. Tie-up No. 3 weaves a fabric with a warp-effect on one side and a weft-effect on the other, so this fabric is not the same on both sides, though both sides are good. If the warp is light and the weft dark, the fabric will be darker on one side than on the other. The effect of the weave is also a diagonal rib.

Tie-up No. 4 makes an extremely soft, loose fabric that makes an attractive sweater and can also be used for a couch blanket. The fabric is so loosely combined, however, that it has no great wearing qualities and the weave should not be used for anything that will receive hard wear. A similar effect, somewhat more closely combined, may be woven on tie-up No. 7. These weaves are more effective when warped and woven in different colors. For a blanket the warp may be made in two colors, arranged in a large

# Some Six-Harness "Fabric" Patterns



For all these weaves the warp and weft should be the same material, or materials that are similar in grist — though not necessarily the same in color.

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plaid, and woven as warped. Linen towelling may be woven on this tie-up also, and the two-color arrangements are interesting for this purpose. Both these tie-ups produce a fabric that is the same on both sides.

Tie-up No. 5 produces a crêpe effect and is good for

light-weight dress fabrics in a fine yarn such as Bernat's "Afghan."

Other tie-ups that may be used in weaving the plain twill threading at (a) are Nos. 8, 11, 12, 13, 14 and 16.

Pattern (b) is a "novelty" twill that makes a handsome

coat fabric. It should be woven on tie-up No. 2, and treadled in the ordinary manner: 1, 2, 3, 4, 5, 6, and repeat, — one shot on each shed. If desired it may be woven in reverse order: 6, 5, 4, 3, 2, 1, and repeat, which makes the twill slant in the opposite direction. This pattern is not adapted to blankets or linens.

Pattern (c) is a particularly interesting form of twill, done on five harnesses. It is known as the “Corkscrew” twill and produces an excellent texture with an unusual effect. This is a closely combined weave and is suitable for tweeds. It has excellent wearing qualities. As it is an unbalanced weave there is more warp on one side and more weft on the other, so it is reversible, though both sides are good. Tie-up No. 6 is the special tie-up for this weave.

Pattern (d) is for a coat fabric in two colors, and should be woven in fairly coarse yarns, such as Shetland. It is woven on tie-up No. 2, but treadled as follows: 1, 2, 3, 4, 5, 6, one shot each, in the darker weft; 3, 2, 1, 6, 5, 4, one shot each, in the lighter colored weft. Repeat. The two colors used for weft need not be the same two colors used for warp, though they should be similar in tone or “value;” — to use painter’s jargon. The pattern has the effect of a bold “Shepherd’s Check.”

Pattern (e) gives the threading for a double-faced twill and should be woven on tie-up No. 9. Weave as follows: 1, 2, 3, one shot on each treadle. Repeat four times. Then 4, 5, 6, one shot each, repeated four times. This method of weaving produces alternating squares in warp-face and weft-face twill. If the entire piece is woven by repeating the first three treadles the effect will be lengthwise stripes instead of squares. The weave may be used for upholstery and for blankets, and is also excellent in linen. It is the same on both sides, and when the warp is set close and the weft well beaten up it makes an extremely strong and durable fabric.

Pattern (f) produces a “Shepherd’s Check” effect. The warp is in two colors arranged as indicated on the draft, and the weft should also be of two colors — the same or similar shades. Weave this pattern on tie-up No. 10, and treadle 1, 2, 3, in one color; 4, 5, 6, in the other, and repeat.

Pattern (g) is a simple “Diamond” arrangement and may be woven on any of the tie-ups listed as suitable for pattern (a). Tie-up No. 1 is recommended. When treadled: 1, 2, 3, 4, 5, 6, and repeat, it produces a zigzag effect. To weave a diamond figure treadle: 1, 2, 3, 4, 5, 6, 5, 4, 3, 2, and repeat.

Pattern (h) is the six-harness “Bird’s-Eye” threading and may also be woven on most of the tie-ups given on the diagram. Pattern (i) is the six-harness “Herringbone” or “Goose-Eye” pattern, and may, like patterns (g) and (h), be woven all one way, or to produce diamond figures. These patterns are familiar to all four-harness weavers, and the six-harness forms are like the four-harness ones except that the effect is richer and more interesting. These patterns are, of course, often used for linens as well as for blankets. They are less appropriate for dress fabrics, but are nice for simple upholstery. Tie-up No. 1 may be used with these threadings.

Pattern (j) should be woven on the four-treadle tie-up No. 15. Treadle: 1, 2, 3, 4 and repeat. This weaves lengthwise stripes of Herringbone and plain tabby. The pattern may, if desired, be woven in squares, bordered by tabby; however, for this effect two more treadles are required, tied 1, 3, 5 and 2, 4, 8, of course. This would be an interesting way to weave it for a baby blanket or couch blanket.

Pattern (k) makes a quite elaborate coat fabric. The warp is in two colors, as noted on the draft, and the weft

should be in the same colors or similar shades. It should be woven on tie-up No. 17, as follows: 1, 2, 3, 4, 5, 6, 5, 4, 3, 2, first in one color and then in the other.

Pattern (l) is in ancient pattern for suits and overcoats — nice for tweeds — that in the old books is named “Dornik.” I have no idea of the origin of the name; no doubt it goes back to pre-Colonial England. Perhaps some British subscriber to *THE HANDICRAFTER* may have information about this and will let us know. In New England “dornik” means a hard, round, flinty stone, such as one finds all too frequently in the fields; but what connection this may have with the old twill pattern it is difficult to imagine. This pattern may be woven on any of the tie-ups suitable for twills. It makes a rather bold effect of the “Herringbone” type.

Pattern (m) looks, on the paper, similar to pattern (g) except that it is on five harnesses instead of six. However, it is a very different weave, for (m) is the “Waffle” cloth. It should be woven: 1, 2, 3, 4, 5, 4, 3, 2, and repeat.

Pattern (n) produces a very interesting diagonal rib in which the threads twill in the direction opposite to the inclination of the rib, with plain tabby between the ribs. It is a striking and unusual texture. For a very “sporty” sports-coat in white or one color it would be handsome. The tie-up for this pattern is No. 19.

Pattern (o) is the interesting and useful “Basket weave.” Some people call a fabric made of several strands of material in plain tabby weave by the name of “basket weave,” but this is a misnomer. The fabric made of strands is a very unsatisfactory fabric, as the strands tend to bunch together when the material is washed, and the effect is ruined. In the true basket weave the threads are firmly interwoven, and this difficulty does not develop.

I mention the matter of the name of this weave because I have a great dislike for words used loosely to cover a number of more or less vague meanings. Unless we are a bit particular in the use of our weaving terms we shall soon be in great confusion. A word is quite valueless when all its corners have been worn away, and the poor thing means any-idea-at-all instead of standing for some single definite thing. I suppose I have in the last few years answered a good bushel of letters asking about the basket weave, so here it is — again. It is included in my *Shuttle-Craft Book* also, of course. It should be woven on tie-up No. 20, treadled this way: 1, 2, 3, 2, 1, 2, 3, 4, 5, 6, 5, 4, 5, 6.

Pattern (p) is another pattern in two colors, which should be used in the weft as well as in the warp. Use tie-up No. 21 and treadle as follows: 1, 2, 1, 2, 3, 4, 3, 4, 5, 6, 5, 6 in the first color, and repeat in the second color. This makes a good coat fabric of the soft and rather loosely woven type, and the weave may also be used for baby blankets and so on.

Pattern (q) is an odd but very attractive weave for fine cottons, with two threads in coarse cotton, and is also excellent in fine worsted with coarse threads as indicated on the draft. The fine warp should be threaded and sleyed regularly as for four-harness twill, and the two coarse threads in each repeat should be sleyed through the same dent in the reed as the fine thread below it on the draft. Weave on tie-up No. 22. Treadle as follows: 1, 2, 3, one shot each in coarse yarn; 6, 7, 4, 5 and repeat, fine yarn. Treadle 1, two shots or a double strand in coarse yarn; 4, 5, 6, 7 and repeat, fine yarn. Repeat. This makes an interesting crossbarred effect. The effect is on the right side of the fabric only.

Pattern (r) is an attractive little pattern for lightweight cotton fabrics for dresses. Two threads in each repeat should be a little coarser than the rest of the warp and may be in a different color if desired. Use tie-up 23 and weave as follows: 1, 2, 3, 4 in fine thread; 5, 6 in coarse thread; 3, 4 in fine thread, and repeat. This makes a tabby fabric with little crosses in the coarse thread.

Pattern (s) is a blanket pattern, not suited to dress-fabrics, upholstery or linens. Done in a coarse yarn such as German-town, the effect is excellent. Use tie-up No. 24 and treadle as follows: 1, 2, 3, 4, 3, 2, 3, 4, 5, 4, 3, 4, 5, 6, 5, 4, 3, 4, 5, 4, 3, 2, 3, 4, 3, 2, and repeat. The pattern may also be woven: 1, 2, 3, 4, 5, 6, 5, 4, 3, 2, and repeat.

A word about the tie-up drafts: As most six-harness looms are of the "jack" type and operate with a rising shed, I have shown the raising ties rather than the sinking ties on this set of tie-up drafts. For the Structo loom use the levers, as indicated by the ties, to form each shed. If used on a loom with the double tie-up, tie the blank squares on each treadle to sink. I have not shown these ties as they make the draft difficult to read.

A tabby can be woven on these patterns if desired, by tying two additional treadles to make these sheds. The tabby is not used in weaving these patterns, but for headings and so on it is a convenience. There is no tabby in the "Corkscrew" twill, of course.

These notes and drafts do not exhaust the possibilities by any means. I have simply tried to give a useful collection of the simpler "fabric" weaves possible on six-harness equipment, and have tried to include threadings for a variety of purposes, — dress fabrics chiefly but many that are suitable for other purposes as well. The success of these fabrics depends largely on the selection of suitable materials, a correct setting of the warp in the reed, and evenness of beat. Simple pattern weaving is far easier for the beginner than the "texture" weaves, as the figures of the design tend to hide small inequalities of beat. One of the most difficult weaves for a beginner is plain tabby; next in difficulty come these twills and fabric weaves.

I repeat that the matter of material is of prime importance in these weaves. If the material chosen is harsh or stiff it does not matter how well it is woven, as the resulting fabric will be hard and stiff also, and as the aim is texture rather than pattern the purpose is defeated before one begins.

The correct warp-setting is also of prime importance. No rules can be set down for this, as the correct setting depends on the material used and on the weave selected. For "50-50" weaves, such as all those presented in this article — weaves in which warp and weft play an equal part — the warp-setting determines the number of weft-shots to the inch and too skimpy a warp cannot be corrected by close beating and additional weft as in some pattern weaves. It may be necessary to do a bit of experimenting with an unfamiliar material before arriving at the best possible warp-setting for a particular fabric. The weaver who goes in for fabric weaving should be equipped with a number of reed of different dentages to permit a wide variety of settings. In a general way the warp-setting for any of the twill weaves should be somewhat closer than for plain tabby.

Of course the texture of an all-wool fabric depends also on washing. A loosely woven piece will shrink much more than a closely woven piece, so that small errors in setting are sometimes corrected by the washing. However, it is safer not to depend too much on this, but to set the warp as correctly as possible. In testing an unfamiliar yarn, as suggested above, it is best to weave a fairly good-sized sample, and to wash and press the sample before making a decision. This saves time and work in the end, and also saves waste of material and disappointment. It makes no great difference if a small bit of pattern weaving proves unsatisfactory, as it can be discarded with little pain, — but to weave many yards of dress fabric and have it turn out badly is a very different matter.

People are far more apt to set the warp too far apart than to set it too close, but the latter error is the more serious. The washing and finishing of the fabric tends to correct the first error and makes the second one worse.

I am led to make these remarks because I am frequently sent samples of unsatisfactory fabrics and am asked to suggest a remedy. In nine cases out of ten the trouble is with the setting, and in the tenth case it is poor choice of material.

We cannot compete with machinery in the making of cheap fabrics, so what we must aim at is quality. We cannot produce a beautiful texture with poor materials, no matter how we weave it. We can hide an ugly warp under the weft in pattern weaving, but in a "50-50" fabric this is impossible.

I do not mean to say that the most costly yarn is always the best for a given purpose. This, of course, is not true. The best material depends on the purpose. For instance, very soft and costly worsteds are not suitable for tweeds. A sturdy quality with a bit of harshness is desirable for these fabrics, which are intended for hard wear. A very solid quality, even a degree of hardness, is desirable for chair-covering, though very unpleasant for dress fabrics. Softness and lightness are desired in a baby blanket, but not to the same extent in an automobile robe. And so on.

The point I wish to make is that the weaver who plans to go in for fabric weaving must be willing to spend a lot of time in experimenting with weaves and materials before launching such a project.

A beginning weaver wrote me recently that she was going to do her practice work with carpet warp to save waste of good material. Of course in doing this she wasted her time, as this practice work would simply show how to weave carpet-warp, and there is little or no use for a fabric made of this material. The yarn used in experimental work is not wasted, even though many of the experiments are failures, as a failure on a small scale will often prevent an expensive failure on a large scale.

My suggestion to a weaver planning to go in for "yard-age" would be to get together a collection of many kinds of material in a wide variety of colors, and to spend as much time as necessary in order to find just the yarns and the weave best suited to the fabric to be produced. The samples made — the unsuccessful ones as well as the successful ones — should be filed away with notes as to the material and the weave used and will be extremely valuable for reference.