

HAND WOMEN'S RUGS

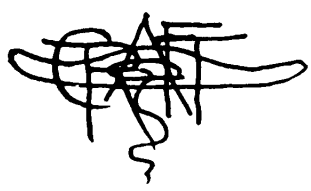
by
Mary M. Atwater



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1948

HTH PUBLISHERS
P.O. Box 468
Freeland, WA 98249

PREFACE

Mary Meigs Atwater has been called "The Dean of Handweavers." She became interested in weaving in the 1920's and her publications, lectures, and workshops were a strong influence in the modern revival of handweaving.

In addition to her Correspondence Course of Handweaving, two books, and a long series of Shuttle Craft Bulletins, she published several monographs. Among the first of these monographs was HANDWOVEN RUGS. Unfortunately, it has been out of print for some time. This book is an excellent source of technical information on rugs, giving concise directions for many unusual techniques. Also, Mary Atwater's presentation is a work of art in itself. Her special style of printing and illustrating make each illustrated page a beautiful design as well as a careful technical presentation.

It is with a special feeling of pride and pleasure that we at HTH Publishers make this handsome and useful work available again to handweavers.

Virginia T. Harvey

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Floor-coverings are an important item in the comfort and sightliness of our houses, and the making of them is a special, and highly interesting, branch of the weavers' art. The range is wide -- between that unlovely article the "hit and miss" rag rug to the velvety Oriental into which has gone the patient labor of years. But for most of us the chief interest lies in the middle ground between these two extremes. Few skilled weavers care to produce the lowly rag affair, and few care to devote their time and talents to emulation of the Oriental rug makers.

What do we want of a floor-covering? That it should be agreeable underfoot and slightly to the eye. That it should lie flat and solidly on the floor so that it will not be a man-trap or a heel-catcher; and that it should be firm enough to withstand hard wear and cleaning during a reasonable space of time. A rug that does not meet all these requirements must be considered a failure. And of course there are special requirements for rugs for special uses. The rug one makes to lie beside the bed will -- or should -- differ from a hearth-rug, or a stair-carpet, or a bath-mat, or a hall runner.

Taking for granted adequate workmanship, success in rug-making depends on selection and combination of suitable materials, proper weaves and agreeable colors and patterns.

Material: Warp

Ordinary cotton carpet-warp, -- at various settings according to the weave -- is suitable for rag rugs, cotton rugs, and for some wool rugs. For high grade rugs, such as those in tied worsted pile, it is better to use a coarse linen or hemp, or a fine jute warp. For some rugs a warp of hard-twisted wool yarn is the most satisfactory.

Wet Materials

Rags. Strips of fabric may be woven into serviceable rugs if the material is properly prepared, is all of the same or similar sort, and is in fairly long strips. If the material is in short pieces, some heavy and some light, and clumsily sewed together, the resulting rug will be lumpy and unsightly. To make such rugs appears to me to be a waste of time and warp.

Cotton "roving," sometimes called "rug-filler" is a very coarse, loosely spun cotton material sometimes used in rug-making. While attractive enough when new, these rugs are apt to look very forlorn after a little wear and a few washings. I do not recommend this material for any type of rug. However there is a material of the same general type, but not as coarse and more closely spun, that may be used with good results for bath-mats, bedroom rugs and similar pieces, in picked up tufting and some other weaves. It is too light, however, for rugs in plain weave. This material is supplied by the Lily Mills, Shelby, N. C., under the designation Art. 814, and comes in a number of excellent colors.

Cotton Chenille makes a better rug than roving, but is not heavy enough for rugs in plain weave unless used in strands of several ends.

Wool chenille is sometimes obtainable. This is a harsh, stiff material, hard to weave, but makes a durable rug when solidly beaten up.

Wool rug-yarns. The coarse wool rug-yarns supplied by many dealers make very good rugs in a variety of techniques, but are not suitable for rugs in tied pile. For this type of rug a much finer yarn used in strands of several ends gives the best results. Very soft worsted yarns, however, should be avoided. A certain amount of body and stiffness is desirable. Mohair yarns may be used.

Other materials, such as jute, are sometimes used for weft in rugs. Un-spun carded wool may be used for rugs in tied pile, and so on. Weavers who are of an experimental turn of mind will enjoy trying odd and unusual materials in their rug-making. Any material is suitable, provided it can be made into a fabric with the required firmness, weight and durability.

Equipment.

Many of the most interesting and beautiful weaves for rugs require only two sheds and may be produced on a simple two-harness loom. But whether the loom used is simple or elaborate, and no matter what the weave, the loom must be of heavy, solid construction. It must make a wide shed, to permit the passage of the large shuttles, and must be provided with a firm batten capable of delivering a heavy beat. The flimsy little affairs that jump about with every stroke of the batten may serve well enough for the making of filmy scarves and such things, but should never be used for rugs. And the weaver who prefers to fan gently with the batten should avoid rug-making. Rugs that one can stick a finger through are worthless, no matter how attractive the colors or the pattern may be.

Weaves used in rug-making. A large number of weaves are used in the making of floor-coverings. The weave to choose for a rug-project depends chiefly on the type of rug to be made and on the material it is planned to use. Some weaves that are excellent for one material are quite impractical for a different type of yarn. One class of weaves must, however, be ruled out entirely. None of the "50-50" weaves are suitable for rug-making, for the reason that in these weaves, in which warp and weft are equal and the same or similar, the fabric produced is not heavy enough for a floor-covering even when very coarse materials are used. The plain weave as used in rugs is not a 50-50 tabby fabric but shows either much more weft than warp or much more warp than weft and should be classed as a weft-face or warp-face "rep." The following list includes most of the weaves ordinarily used in hand-woven rugs:

(1) Rugs in Plain Weave

- (a) Ordinary rag rugs and rugs in cotton roving
- (b) Swedish "twice-woven" technique
- (c) Swedish "matta" technique
- (d) Picked-up tufting
- (e) Tied pile -- Oriental, Swedish "flossa", "half-flossa," "rya", etc.
- (f) Soumak technique
- (g) Tapestry techniques -- Killim, Navajo, etc..

(2) The Four-Harness Overshot Weaves

- (a) American Colonial
- (b) "No-tabby" technique
- (c) Indian saddle-blanket weaves

(3) Crackle Weave

(4) Summer and Winter Weave

(5) The Two-Warp Weave

There are, of course, other weaves occasionally used for rugs, but the above list includes all those in general use. Rugs are sometimes made in the double weave, but unless very small patterns are used the effect is bad as the two fabrics pull apart and tend to bag. This is therefore not a very practical weave for rugs. Jute rugs, useful for porches and hallways, may be woven in the Spanish openwork weave. I have made some very unusual and attractive small rugs using the Guatemalan technique of the Totonacapan girdles. But these are weaving specialties rather than general practise and will not be described in detail in this pamphlet.

Group (1-a) Ordinary plain-weave rugs.

Ordinary plain-weave rugs are woven of rags, heavy cotton roving, or chenille. The chenille rugs are the most attractive, and as small bathmats or bed-side rugs are serviceable and practical. In planning such rugs the problems of proportion are important, and colors should be carefully selected. These problems of design have been treated in the Shuttle-Craft Bulletin, and copies of this issue are available,

Many attractive arrangements of stripes in contrasting color may be devised. A few suggestions will be found on Diagram No. 1. And a simple but effective decoration may be made by twisting together two strands of different color. If the strands are twisted in the same direction for several weft-shots an effect of diagonals will be produced, and if the return strand is twisted in the opposite direction from the first strand one produces a chevron effect. In making these twists it is important to twist evenly -- say one twist per inch. Otherwise the effect will be confused. These borders are possible, of course, in cotton roving and rags as well as in chenille.

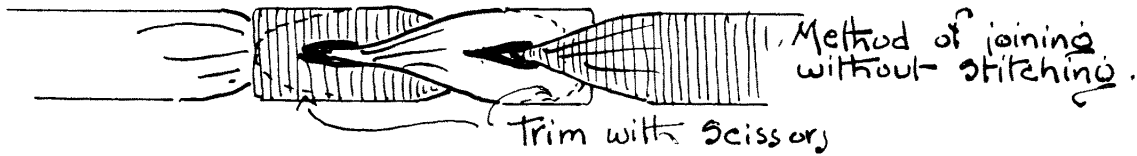
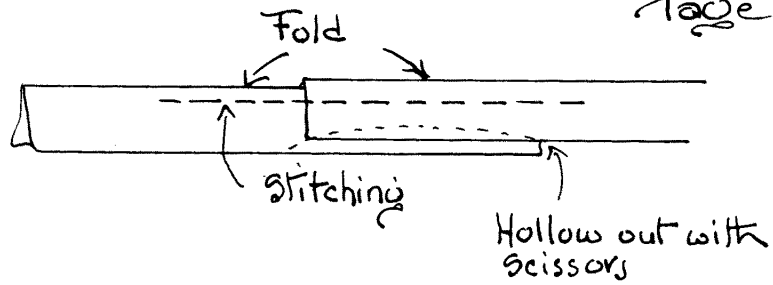
For rugs of this type use ordinary carpet warp at a setting of 12 ends to the inch. A somewhat heavier rug will result if the warp is set at 15 to the inch and threaded double: 1,1,2,2,1,1,2,2, or 1,2,3,4 and treadled 1-2 and 3-4.

If the ordinary light-weight cotton chenille is used for rugs it should be woven in a strand of two or three ends. The coarse cotton roving may be used in a single strand. But as noted above under "materials", this coarse cotton rug-filler is not recommended, as the rugs made of it do not keep their attractive appearance under wear and washing.

It is entirely possible to make excellent rugs of rag-strips, but the material must be properly prepared. The weaver is well-advised to decline to weave the poorly prepared material sometimes offered, as rugs woven of it would be unsatisfactory. Small pieces of different kinds of fabric, cut different widths and sometimes on the bias, and lumpily sewed together, are not worth weaving. New material, cut evenly into strips several yards long, makes the best rag rug. Sometimes it is possible to purchase long strips of selvage from the dealers in industrial waste material, and these -- if of solid fabric and good in color, -- make very good rugs. Old sheets may be dyed and stripped, or faded drapery fabrics may be treated in the same manner. Old blankets, worn bed-spreads and the like may also be used. But old clothes can rarely be used to advantage. The pieces are too short, and the fabrics are usually too light in weight for the purpose. In the old days, when all fabrics were woven to endure, and a man's suit might descend by will to his grandson, and every scrap of fabric was valuable, the rag rug was an important item of household economy. Conditions today are entirely different. The light-weight fabrics we use for clothing have little wear left in them when discarded, and if we purchase new material to strip for rugs the cost of the material is likely to be higher than the cost of chenille or wool rug-yarns. So that from the point of view of economy there is little to be said for the rag rug.

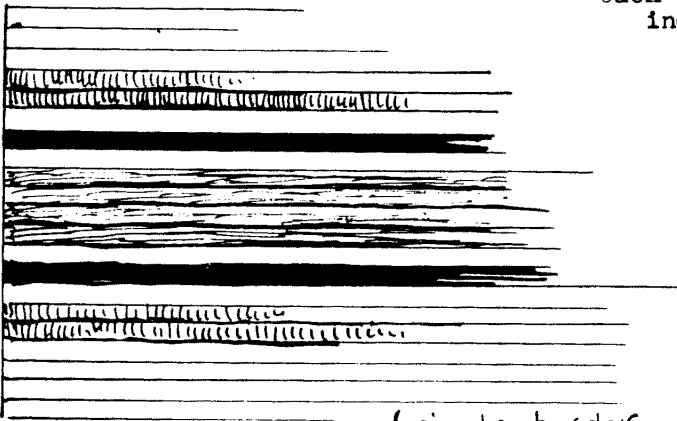
In my opinion there is nothing to be said for the "hit and miss" affair so unpleasantly familiar to everyone. In the old day rags were carefully sorted as to kinds and colors, and when woven into rugs some orderly system of stripes was carried out. These homely old things, when made of several strips carefully matched and sewed together, are not unattractive for a cottage bed-room. But small rugs of this type are rarely heavy enough to lie firmly on the floor and are scuffed up by every passing foot. They can hardly be considered either decorative or useful.

Correct method
of joining and
stitching



If rag strips are several yards long it is not necessary to stitch them together. Simply taper the ends with scissors and overlap them an inch or so in the shed. Shorter strips should be stitched, but not across and across as is sometimes done. The correct method of stitching is illustrated above: lap the two strips to be joined, fold lengthwise and stitch along the fold. Then hollow out with the

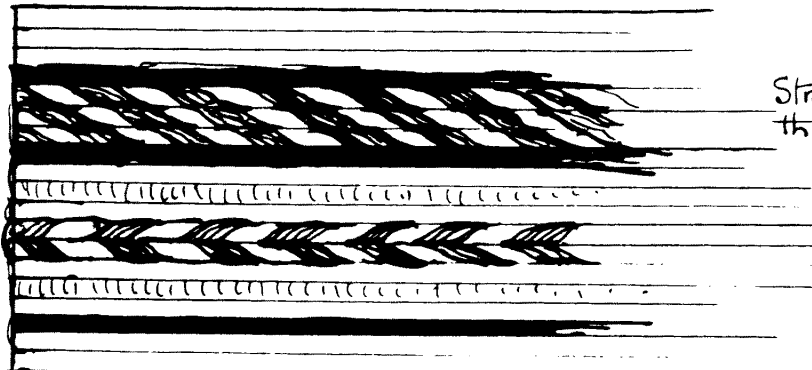
scissors as indicated. This method of joining will not make a lump in the woven fabric. Strips may also be joined, without stitching, as shown. Cut a lengthwise slot, like a buttonhole, in each end of the strips and lace together as indicated. The excess fabric should be cut away as illustrated.



A simple border

Strips should usually be cut rather than torn, to avoid linty edges. The width of strips depends on the material used -- heavy fabrics should be cut in narrower strips than light-weight fabrics. If very wide strips are used the effect will be bunched and it will be difficult to beat the material together firmly.

Borders in twisted strands



Strands twisted in
the same direction

Strands twisted
in opposite
directions

Method (1-b) -- Swedish "Twice-Woven" rugs.

An interesting way to use waste material, such as rags in short pieces, short ends of warp, of wool yarns and so on -- or regular coarse weft material of any kind if one prefers -- is the Swedish "twice-woven" technique. The rugs produced are heavy enough to lie well on the floor and if carefully made can be attractive in appearance. These rugs are, properly speaking, chenille rugs. By the first weaving one makes the chenille, and the rug is made in ordinary plain weave by the second weaving.

For the first weaving make a warp as wide or narrow as you choose, setting the warp in strands of six ends spaced some distance apart. If a 15-dent reed is used, sley the first group of six threads at three ends to the dent. Skip eight dents and sley the next group of six threads through two dents as before, and so on all across the warp. If a heavy chenille is desired, space the strands of warp further apart. The warp may be threaded in plain weave, or in three-thread leno. The leno, of course, holds the weft more firmly than the plain weave.

If waste material is used, the rags should be sorted into color groups -- dark, medium and light, for instance. It is not necessary to have all the pieces in a group exactly the same color. In fact a mixture of shades, provided the color "values" are similar, gives a more interesting effect than a single color. The rags need not be sewed, but may be inserted in the sheds with the fingers, though if looped together, or in lengths that may be wound on a shuttle, the work is more rapid. Beat as firmly as possible.

To produce a pattern -- simple figures are best -- lay out the desired figure full size on a large sheet of Manila detail paper, or ordinary wrapping paper. One complete repeat of the pattern is sufficient. Take a cord or narrow tape back and forth across the drawing, allowing four crossings to the inch, and mark off on on this the changes of color required to produce the pattern. This tape may then be used as a guide for the first weaving. It is desirable to do this before setting up the warp for the sake of convenience. For instance if the pattern repeat is four inches deep and you wish to weave the rug 32" long, or eight repeats, a warp of eight strands would be convenient.

For a border in solid color, top and bottom, make a yardage in plain color. Suppose, for instance, that the rug is to be 24" wide: four times 24" is 96" or 2 3/4 yards. This is the yardage required for one inch. Eight times this is the required yardage for the two borders -- 22 yards. If your warp is of eight strands weave 2 3/4 yards in plain color. Actually weave about 3 yards, to allow for overlapping where the strands join.

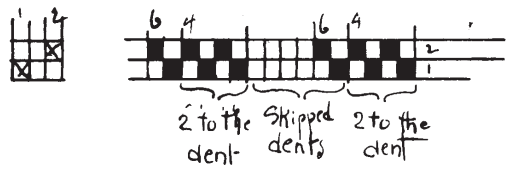
When the first weaving is complete, cut the strands apart through the center of the spaces between the warp-groups. Use the resulting material as weft for the second weaving.

For the second weaving use ordinary carpet-warp at a setting of 12 ends to the inch, threaded and woven for plain weave. Beat as firmly as possible.

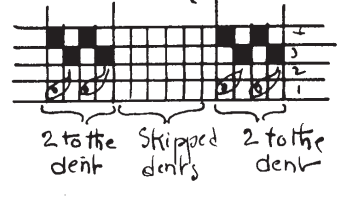
These rugs take time in the making, but they are practical and durable. If one wishes to make rugs of waste material this is probably the best way to make them. Some patterns are suggested on the diagram on page six, and other patterns in this pamphlet might be used, or adapted, to this technique without difficulty. Quite elaborate patterns may be produced if one cares to take the trouble, but it is just as well to begin with something simple.

"Twice-Woven" Technique (1-b)

Plain-weave set-up for first weaving

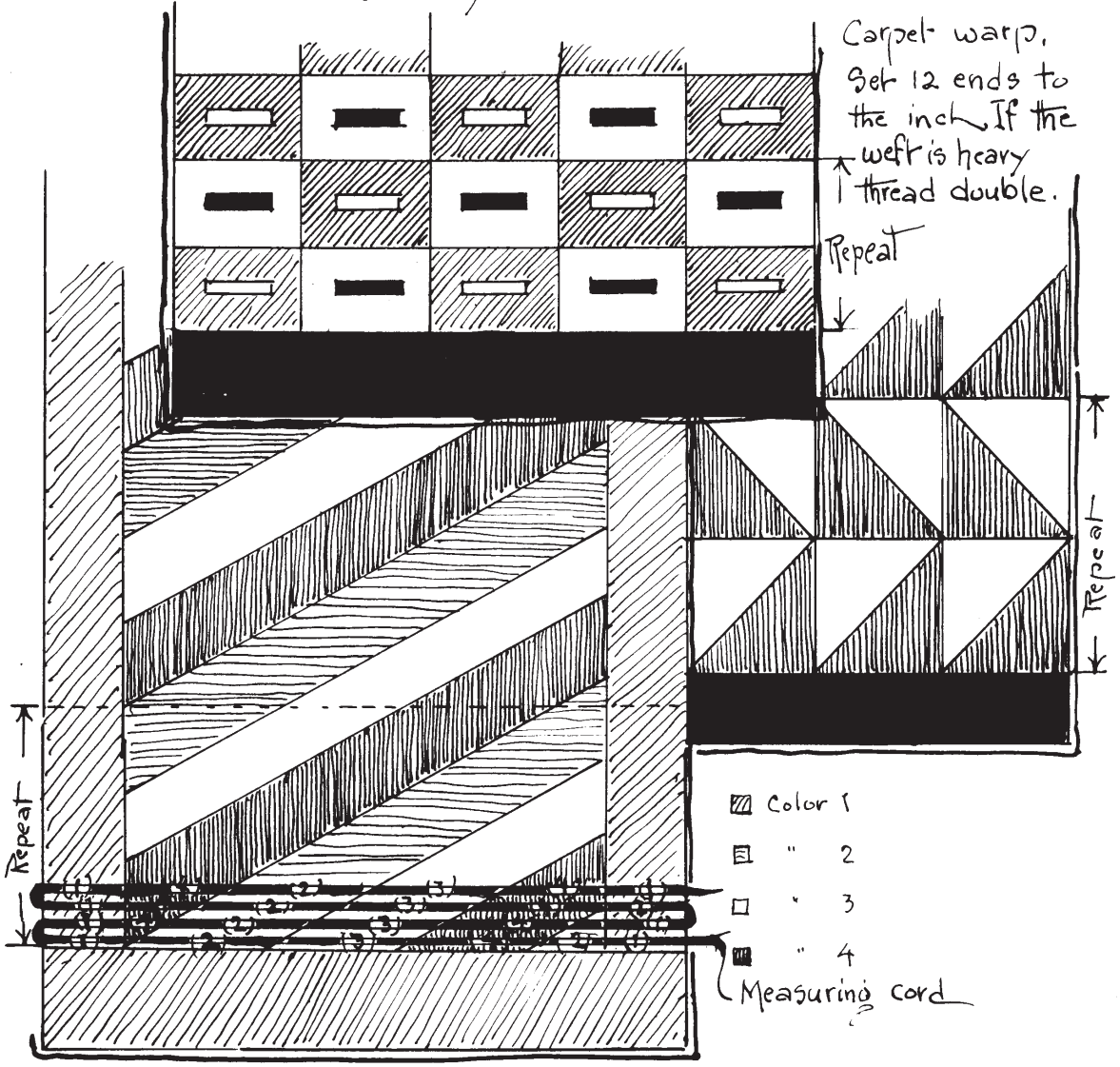


Leno set-up for first weaving



(Use 4 or 6 warp-ends in each group)

For Second weaving



Carpet warp, set 12 ends to the inch. If the weft is heavy thread double.

Repeat

Repeat

Repeat

- Color 1
- " 2
- " 3
- " 4
- Measuring cord

Method (1-c) The Swedish "Matta" technique

Rugs in this technique are not very popular with American hand-weavers, and are shown in detail in all the Swedish weaving books and also on a page of the Shuttle-Craft Guild RECIPE BOOK, so it seems unnecessary to give them much space here. The method consists in using a hard-twisted cotton in two colors for warp, setting the warp close enough to cover the weft completely, and weaving alternate shots of coarse and fine weft. If threaded in the familiar "Log Cabin" style, two-block patterns may be produced. Thread alternately dark and light for the first block and alternately light and dark for the second block. To weave the first block dark and the second light: treadle to raise the first harness and weave a shot of coarse material. Treadle to raise the second harness and weave a shot of fine material. Repeat till the block is square. To weave the second block reverse the colors by weaving two successive shots of fine weft and continue, coarse and fine as before till the second block is square. More elaborate patterns in this technique may be woven on four harnesses.

This is heavy weaving, as the close-set warp tends to stick in the reed making it hard to open the sheds. Use a very coarse reed, sleyed as may be required.

An old Colonial rug-carpet in a modification of this weave might be of interest. Two warps were used -- a warp of hard-twisted wool yarns in several colors arranged in stripes, which made the face of the carpet, and a warp of heavy linen that made the backing. The threading was wool and linen alternately. The entire piece was woven with a coarse weft under the wool warp and a linen like the backing warp under the backing threads. For the coarse weft a strand of several narrow strips of rag was used. The wool warp was set close enough to cover this weft completely. This wool warp was of a medium weight, hard-twisted yarn. Though not particularly interesting or beautiful this made an honest and durable stair-carpet. It might be made of jute instead of wool for a stair or a hall-runner in an institution or in a building where hard wear is the chief consideration. Cut burlap bags rather than cotton rags might in that case serve as weft.

Method (1-d). Picked-up Tufting

Pile fabrics have in all times been highly regarded for rug-making. Tied pile, in the Oriental manner, or even in the far simpler and more rapid Swedish "Flossa" manner, is undoubtedly the best technique for pile. But these techniques take a great deal of time and should, in my opinion, be carried out only in high grade wool yarns for the making of a very special rug. Tied pile in cotton would seem a waste of time.

However, a very attractive and practical pile effect in cotton may be produced in picked-up tufting. As far as I know, the application of this weave to rugs is an innovation of our own. It can be recommended for bathmats, small bed-room rugs and the like.

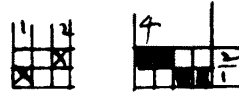
The weft material used should be the light-weight rug cotton mentioned in a previous paragraph -- used double for the tufting shots and single for the foundation shots. Coarse cotton roving is too thick and clumsy for the purpose.

Details of the weave, together with several patterns, are given on pages eight and nine, following. A great variety of pattern is possible in this technique, but the simpler figures are the more effective. The pattern used should cover the foundation fairly closely, and the untufted spaces should not be very large or the rug will have an uneven effect underfoot. Otherwise one may make what pattern one pleases.

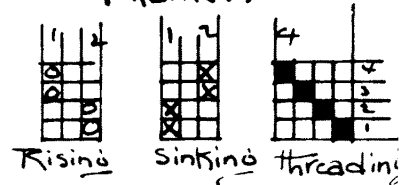
Use a fairly fine wire for the pick-up, so that the loops will not be too large, and be careful to take the weft around the wire in the same direction and at the same tension for all loops. Beat as firmly as possible.

Picked-Up Tufting-Technique (1-c)

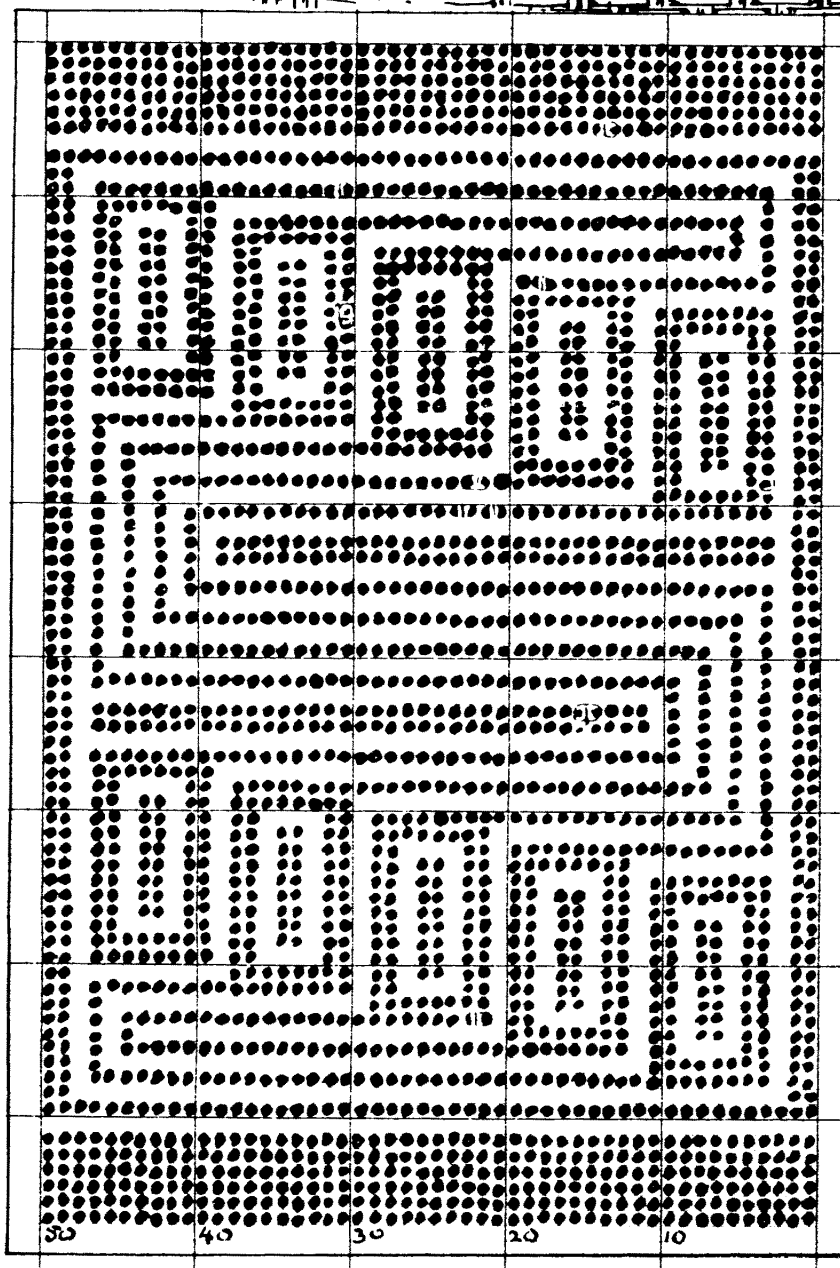
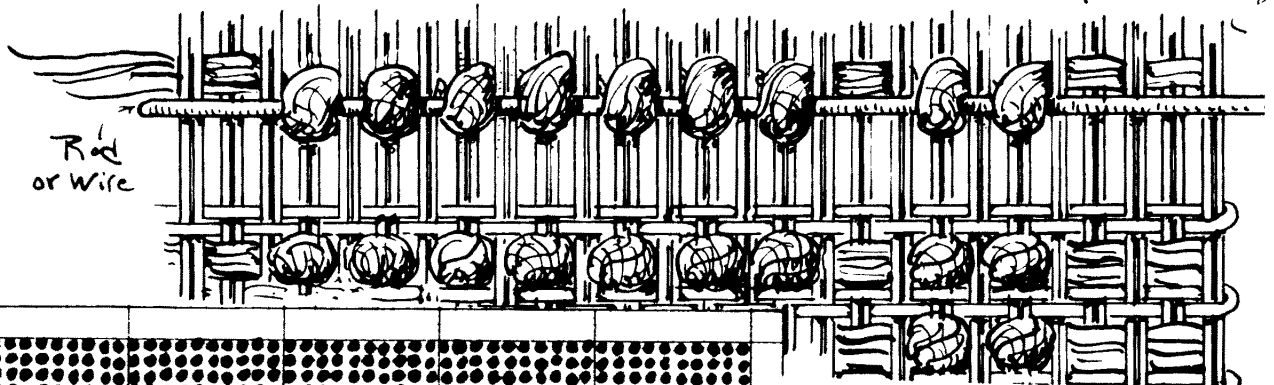
2-harness



4-harness



Rising Sinking threading



Bath-Mat-- Illustrated

Warp: ordinary carpet-warp set at 12 ends to the inch. Thread as at (a) or (b). 218 ends

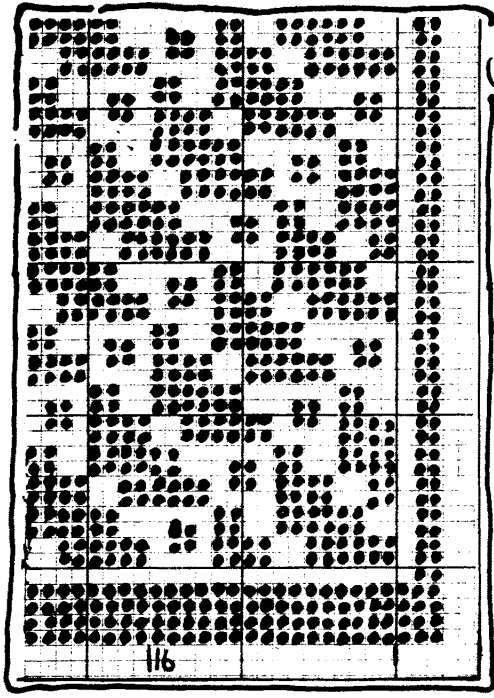
Tabby weft, light-weight rug-cotton, single ;
Pattern weft, light weight rug-cotton, double.

Weave: tabby heading, end-in on shed (2) -- right to left. With the shed still open, weave double strand of pattern weft, right to left; turn around a thread at the edge and weave back left to right through the (2) shed. Weave (1), (2), tabby material. Repeat the last shots, ending with (1, (2) in tabby.

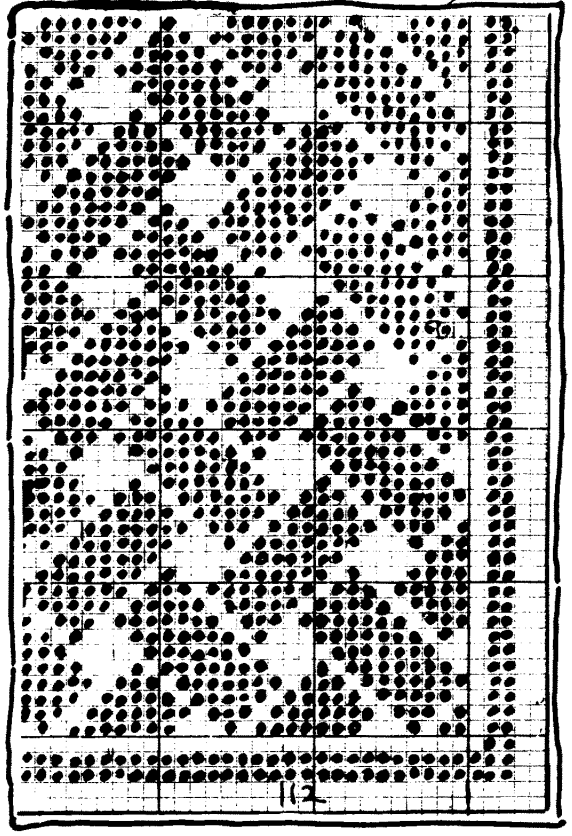
Pattern: With the (2) shed still open, weave right to left with the double strand of pattern weft. Omitting the first two spaces, and the last two, pick up loops of pattern weft between each pair of raised threads, beginning at the right and working to the left. Take the strand around an edge warp and bring it back through the (2) shed. Tabby (1), (2). Repeat six times for border. Thereafter, follow the pattern.

Patterns for Picked-Up Tufting

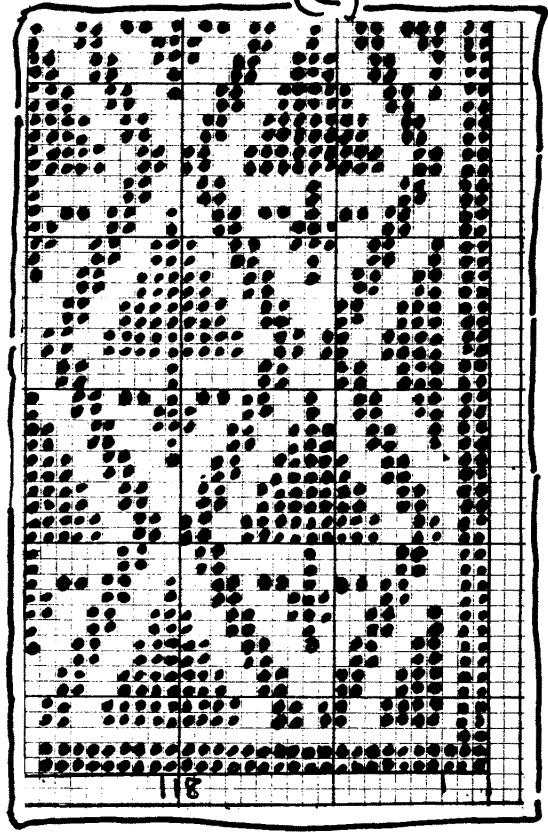
(a)



(b)



(c)



For a small rug or bath-mat in pattern (a), warp 210 ends. This will weave a little less than 17" wide, with three repeats of the figure.
 For a rug a little over 20" wide, warp 258 ends. This gives four repeats of the figure.
 For five repeats, and a width of 25½", warp 306 ends. And for a width of almost 30" warp 354 ends.

For pattern (b) warp 266 ends, or -- for a wider rug -- 330 ends.

For pattern (c), warp 254 ends, or -- for a wider rug -- 326 ends.

Setting and threading as given on page 8 and weaving as described.

If it is desired to omit the side borders as sketched, make the desired threading 16 ends narrower. For wider borders add 8 ends to the threading for each additional row of tufts desired.

The pattern possibilities in this technique are practically unlimited.

High grade pile rugs are made with knotted pile. Oriental pile rugs, and rugs in the Swedish "flossa" style, are tied in the Ghiordes knot, shown at (a) and also at (e) on the diagram, page twelve. The Sehna knot, shown at (b) on the diagram, is the knot used in Chinese rugs. The single knot at (c) was used in the Middle Ages by French rug-makers. A study of these knots makes it clear that the Ghiordes knot is the firmest of these rug-knots, and it is the form of knot most used by modern hand-weavers.

Oriental rug-makers cut the yarn into short lengths and make each tie separately. In the far more rapid method of making tied pile known as Swedish "flossa" and "rya" the material is used in a long strand that is taken under and over a guide, as illustrated at (e). This guide is ordinarily made of a metal strip folded back on itself at the center, leaving a slot, and when the knotting of a row is complete the pile is cut by running a sharp knife along this slot. The depth of pile is regulated by the width of this guide -- which must, of course, be long enough to extend all the way across the warp.

Pile rugs should not be woven in strips and sewed together, and if a wide rug is desired it is necessary to use a very wide loom at which four or more weavers work together.

The best warp for rugs in knotted pile is a coarse, rough linen or tow material. These rugs are costly, both in time and material, and ordinary cotton carpet warp is hardly strong enough or durable enough to hold the weight of wool in the pile. The warp-material, in a double strand, should be used for the foundation weave, and for the pile a high grade wool or worsted yarn, not a coarse rug-yarn but a yarn of about "Shetland" weight in a strand of several ends. The very coarse rug-yarns cannot be tied tight enough, and if used the pile will pull out under wear and under cleaning.

To weave a knotted pile rug by the Swedish method proceed as follows: First weave a heading in plain weave, using a double strand of warp-material for weft and beating as closely as possible. For the first row of knots, set the gauge on the warp, with the shed closed, and omitting the first six warp-ends on the left margin of the warp tie the first knot on threads 7 and 8. Take the strand of warp from right to left under thread 7; throw the loop of weft from left to right over threads 7 and 8; take the strand from right to left under thread 8. Draw the knot close against the edge of the heading. Take the strand under the gauge, and then tie the knot again, on threads 9 and ten. Proceed in this manner all across till within six warp-ends of the right hand margin. With the foundation weft weave four shots in plain weave on the six threads of the right hand margin. Then weave with the foundation weft all across from right to left. Weave four shots in plain weave back and forth over the six threads of the left hand margin, and weave all across from left to right. For the second row of knots repeat as described for the first row, making the knots over the same threads for each row. Patterns are produced by changes of color.

Beat as firmly as possible. In fact hammer heavily. A loosely woven rug of this type will not wear and will not last, and such a rug should be expected to remain handsome and useful for at least a hundred years or so.

A variation of this weave is the Swedish "half-flossa." In this type of rug the tufting does not cover the entire surface, the figures being tufted against background spaces in plain weave. These background spaces must be woven -- like the borders -- with four shots back and forth to compensate for the space taken up by the knots.

However, there is a type of knotted pile that does not require this weaving back and forth over plain background spaces. This weave was noted in a saddle-blanket from Argentina. The warp in this piece was of heavy wool, set very close, and the pile knots were tied on an open shed -- on the raised threads only, and always on the same shed. One of the plain weave background shots lies under the row of knots, and the under side of the rug has a plain, smooth finish. A rug of this type may be made with unspun wool -- either wisps taken directly off the cards or with unspun wool "roving," obtainable from a wool-mill. A pattern

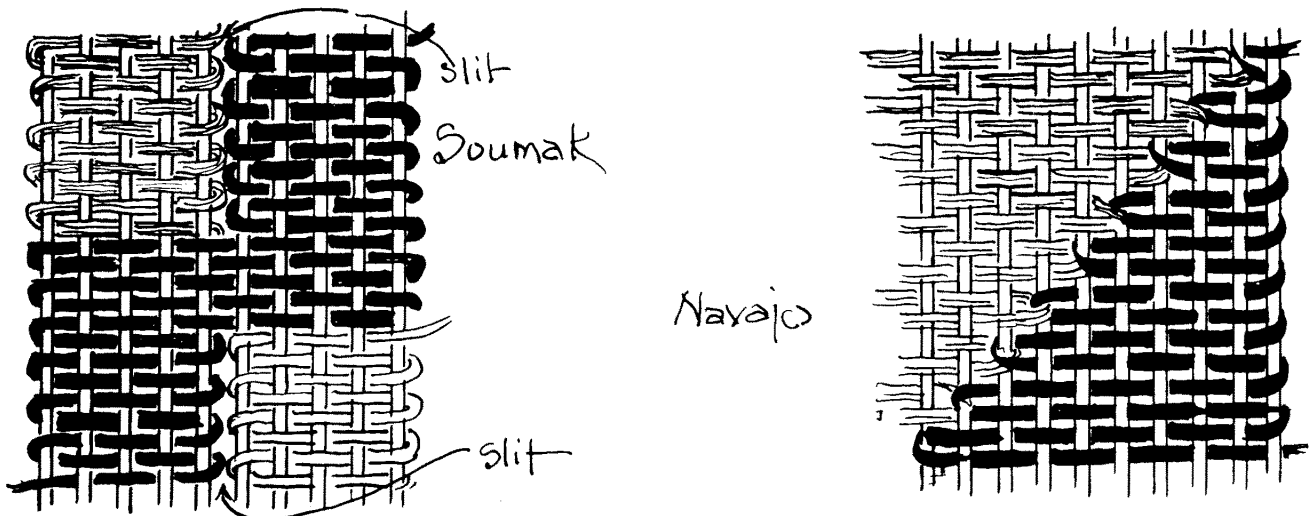
for a rug made in this manner is given on page fourteen. The figure was suggested by the pavement of a public square I once saw in a mountain village in Mexico, the paving material being beer-bottles set neck down in cement. In the sample I wove of this pattern I made the square cushiony figures eleven knots wide, leaving the space of one knot for the untufted background separating the figures. A white rug of this type makes a very pleasant bed-side rug .

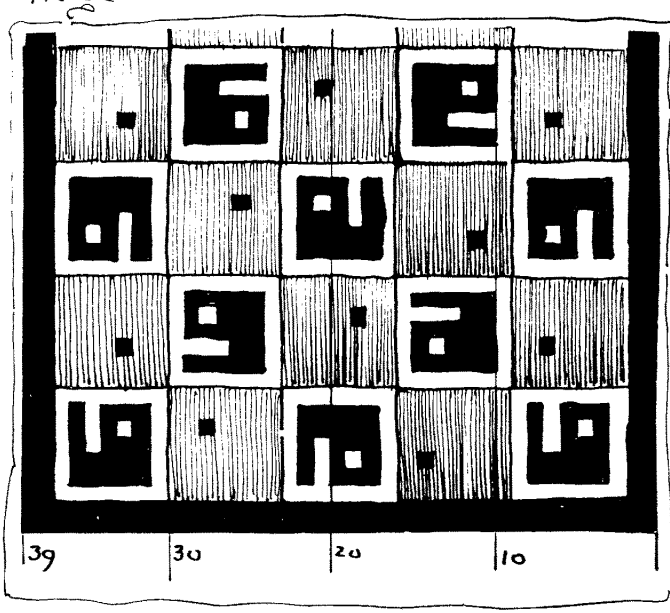
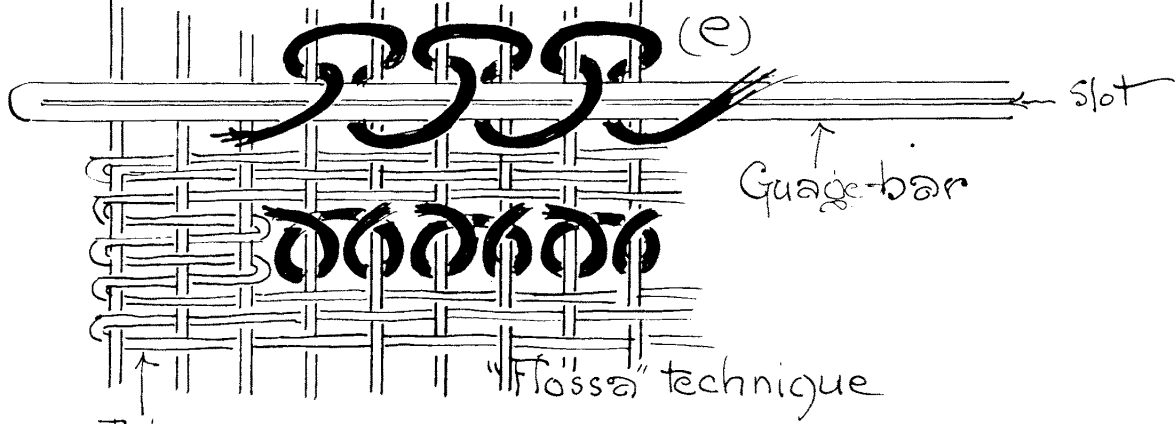
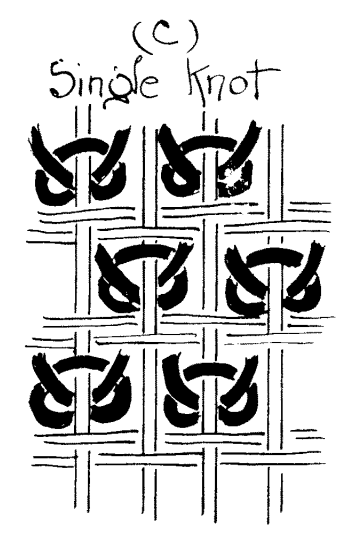
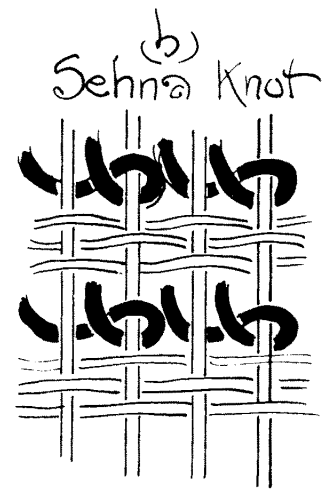
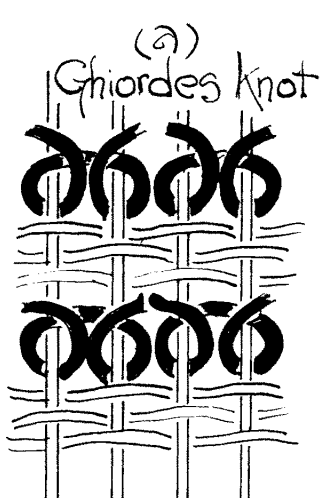
Method (f). An allied technique, though it produces a smooth fabric instead of pile, is the Soumak technique, illustrated at (d) on the diagram -- page twelve. For this a somewhat coarser yarn may be used than for knotted pile. The method of taking the strand of yarn over and under the warp-threads is clearly shown on the diagram. The strand should, of course, be drawn flat and not left in loops as shown -- for the sake of clearness -- on the drawing. Beginning at the left hand side of the warp, omit the first six warp-threads as for tied pile, and continue to within six threads of the right hand edge, taking the weft down between the warp-ends. Weave a tabby shot in a double strand of warp-material, first weaving two shots back and forth across the border. Bring the weft-strand up between the warp-ends and loop in reverse from right to left. These two trips across the warp constitute a unit of the weave. When introducing other colors to form a pattern never put them in on the trip from right to left but always when working from left to right. If a smooth under side is desired, the warp may be set close as for the saddle-blanket from the Argentine, with the Soumak worked on the top threads of an open shed and two tabby shots woven between, the first tabby shot running under the Soumak. Very handsome effects are possible in this simple technique. Bold figures are best, as too many changes of color in a row are troublesome.

Method (l-g) Rugs are sometimes woven in one or another of the tapestry techniques, the most familiar being Navajo and Killim. The Navajo pieces are really blankets rather than rugs, but are heavy enough as a rule for use on the floor. The Killims are rather light weight for floor-covering, and the length-wise slits between colored areas, that are a part of the pattern effect, are not very practical for rugs.

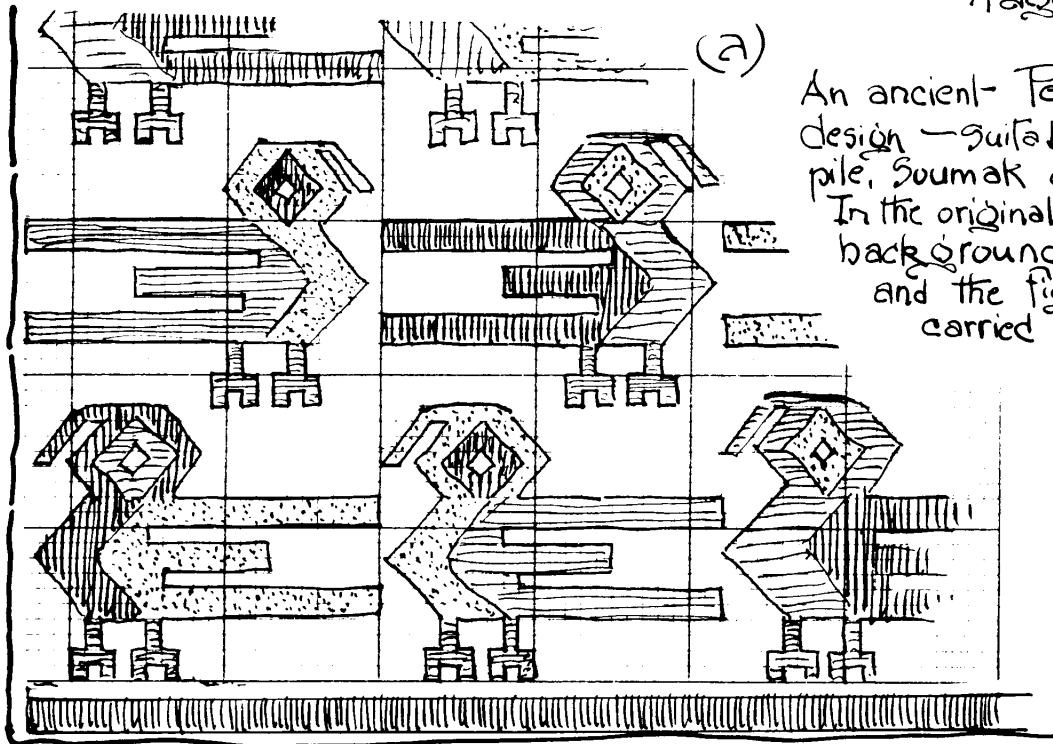
The chief difference between these two techniques is that in Killim the weft threads are taken back and forth each in its own area, without interlocking, and as the typical patterns are built along square lines there are open slits along the perpendicular edges of the figure. In the Navajo technique the weft threads interlace around a warp-end, leaving no slits, and figures with diagonal lines are customary. The effect, of course, is also very different due to the difference in material used, the wool in the Killim pieces being much finer and much harder spun than the heavy wool yarns used by the Navajos.

Tapestry weaving is a world in itself, and there are many good books on the subject. For those reasons -- and for lack of space -- tapestry methods will not be described here in detail





(f) A simple pattern for "flossa" weaving

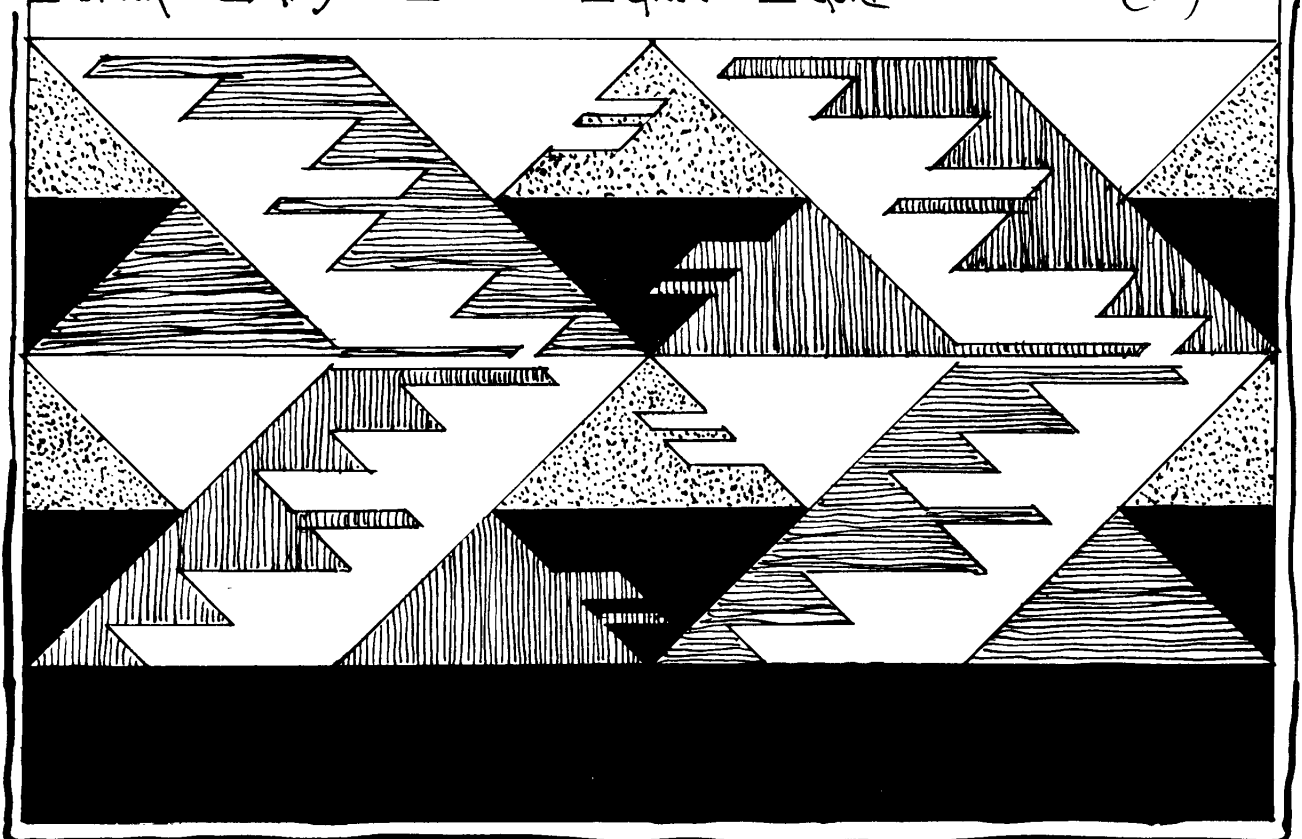


An ancient-Peruvian design - suitable for knotted pile, Soumak or tapestry. In the original piece the background is brown and the figures are carried out in scarlet, pink and yellow.

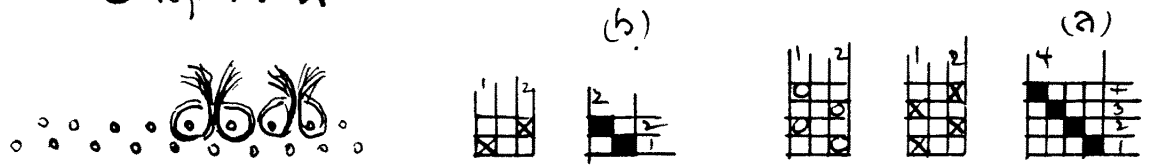
Polish Design - suitable for Knotted Pile, Soumak, or Tapestry

■ Black ▣ Grey ▤ Blue ▥ Green □ Gold

(b)



Tied Pile - Unspun Wool

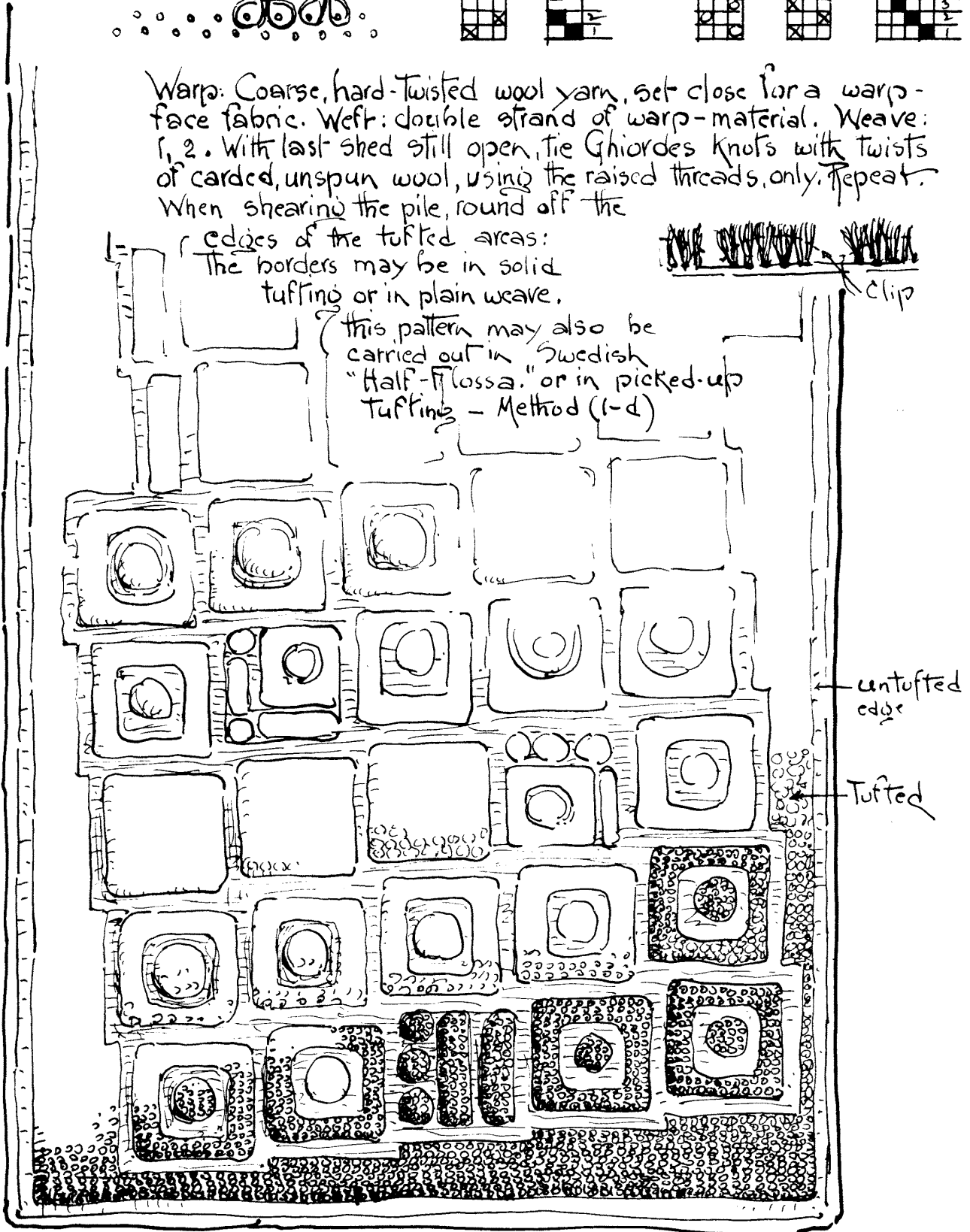


Warp: Coarse, hard-twisted wool yarn, set close for a warp-face fabric. Weft: double strand of warp-material. Weave: 1, 2. With last shed still open, tie Ghiordes knots with twists of carded, unspun wool, using the raised threads, only. Repeat. When shearing the pile, round off the

edges of the tufted areas:

The borders may be in solid tufting or in plain weave.

this pattern may also be carried out in Swedish "Half-Flossa," or in picked-up Tufting - Method (1-d)



Method (2-a). Rugs are sometimes woven on one or another of the American Colonial overshot patterns. A good many of these rugs were made in the early days of the hand-weaving revival. Fewer are being made at present. The truth is that the beloved and familiar "four-harness overshot" is not a very practical weave for rug-making. As far as I know, the early-day weavers never used this weave for floor-coverings. We have so many better weaves for the purpose that it might be well to follow their example.

When woven in coarse cotton roving or in rags, overshot rugs are lumpy; and if a pattern with long skips is used, they are also heel-catchers. Though often attractive in appearance when first made, they do not stand up well under use and washing and soon develop a bedraggled appearance. However, if a pattern is used in which all the skips are short -- such a pattern for instance as draft No. 137 in the Shuttle-Craft Book -- and the weft is cotton chenille, the result is quite satisfactory. For such a rug the warp -- ordinary carpet-warp -- should be set at 15 ends to the inch and the chenille weft should be used in a single strand for the tabby shots and doubled for the pattern shots.

Overshot rugs in coarse wool are too light to lie well on the floor, and look too much like pieces of coarse coverlet used underfoot.

Method (2-b). Though This rug-making technique is classed under overshot weaving the effect is entirely different from that of the usual Colonial pattern. The fabric produced is thick and heavy and has a smooth surface, so that these rugs lie well on the floor and do not present undue hazzards to the careless foot.

Warp for these rugs should be set at 12 ends to the inch, and should be threaded as shown on the drafts on pages sixteen and seventeen -- with three threads alike. The three threads may be drawn through the same heddle, but it is far better practice to use three heddles each with a single thread.

This is a good technique for cotton rugs, but very coarse cotton roving should not be used. The light-weight cotton rug-filler gives excellent results. Cotton chenille may also be used, and even fine-cut rags in solid colors. It is not advised for wool.

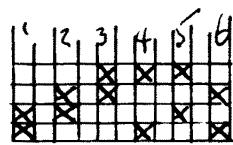
The treadeling is extremely simple, the four pattern treadles being woven in the same order throughout, and the tabby used only for plain-weave headings. The figures are produced by changes of color. The complete treadeling for Pattern (b), page sixteen, is given on the diagram. This sufficiently illustrates the method, it is hoped, and other patterns in great variety may be woven in the same manner.

This weave has a tendency to narrow in and particular care must be taken to avoid this. A template may be used, but it is not necessary if sufficient slack in the weft is allowed for take-up. The edges also require special care, but will be tidy if the colored weft strands are taken around each other in correct order. A selvage may be threaded: 111,333,222,444 and repeat, but this tends to fill up more rapidly than the body of the piece and should be set further apart in the reed than the pattern threaded, a missed dent being left between the groups of three threads.

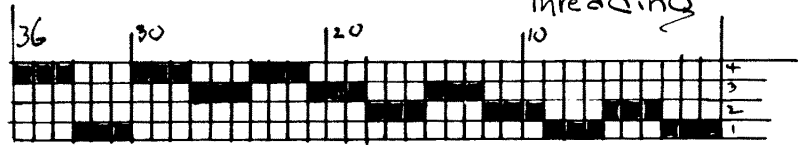
Beat firmly, so that the warp is completely covered. Technically speaking, the fabric is a weft-faced "rep." If very heavy weft material is used and it proves impossible to beat it together to cover the warp, thread four warp-ends alike instead of three threads as shown on the draft. This has the effect of wider spacing without reducing the quantity of warp. To reduce the number of warp-ends to the inch would be to weaken the warp, which would not then be strong enough to support the weft, and the rug would soon come apart.

The pattern effects in this weave are varied and interesting. For the popular "boy and girl" pattern, and other patterns see the leaflet published by the Lily Mills Co., Shelby, N. C.

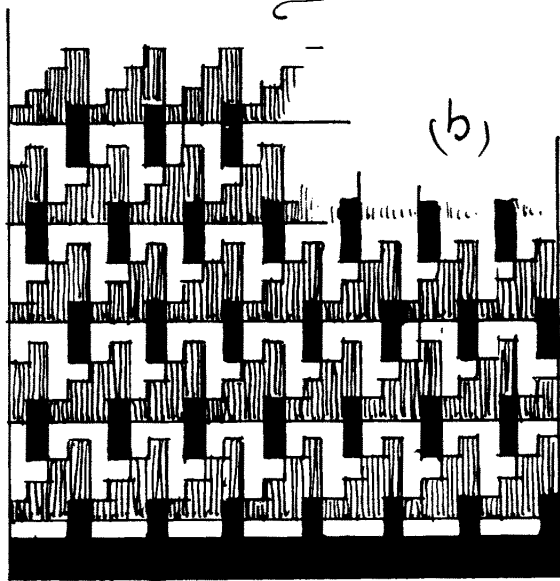
"No Tabby" Technique, (2.b)



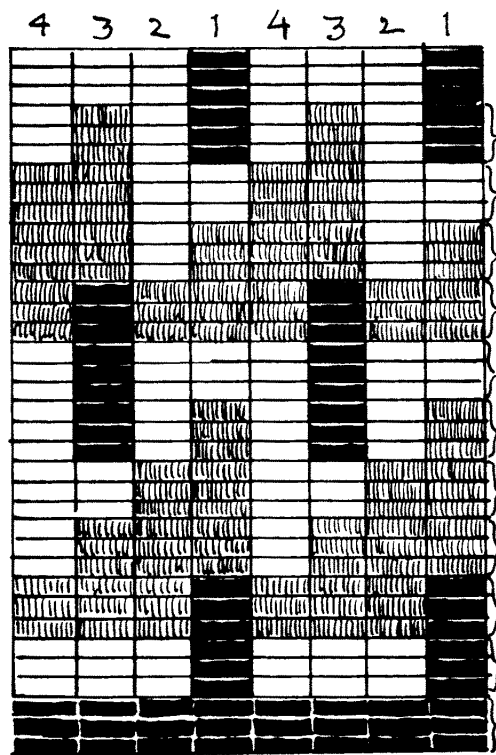
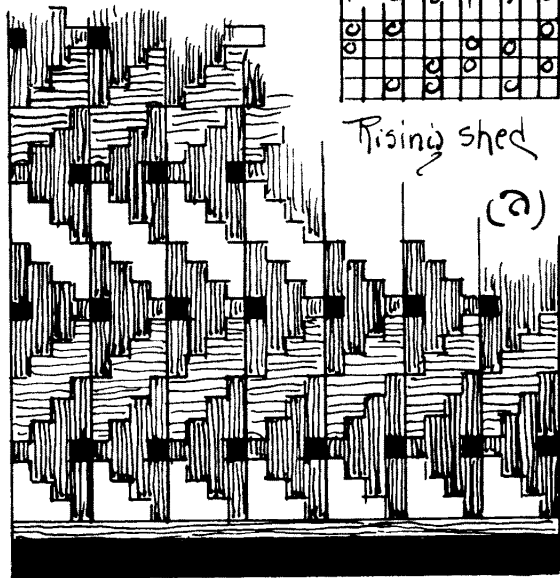
Sinking shed



Threading



Rising shed



■ Color (X) ▨ Color (Y) □ Color (Z)

- Treadle 1 (X); 2 (Z); 3 (Y); 4 (Z) — 3 times
- " 1 (Z); 2 (Z); 3 (Y); 4 (Y) " "
- " 1 (Y); 2 (Z); 3 (Y); 4 (Y) " "
- " 1 (Y); 2 (Y); 3 (X); 4 (Y) " "
- " 1 (Z); 2 (Z); 3 (X); 4 (Z) " "
- " 1 (Y); 2 (Z); 3 (X); 4 (Z) " "
- " 1 (Y); 2 (Y); 3 (Z); 4 (Z) " "
- " 1 (Y); 2 (Y); 3 (Y); 4 (Z) " "
- " 1 (X); 2 (Y); 3 (Y); 4 (Y) " "
- " 1 (X); 2 (Z); 3 (Z); 4 (Z) " "
- Border: 1 (X); 2 (X); 3 (X); 4 (X) 9 "

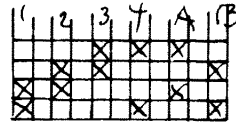
(b). Detail.

Read up. Repeat, omitting border.

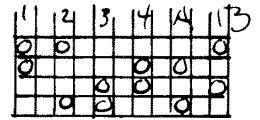
"No Tabby" Technique, (2.b)



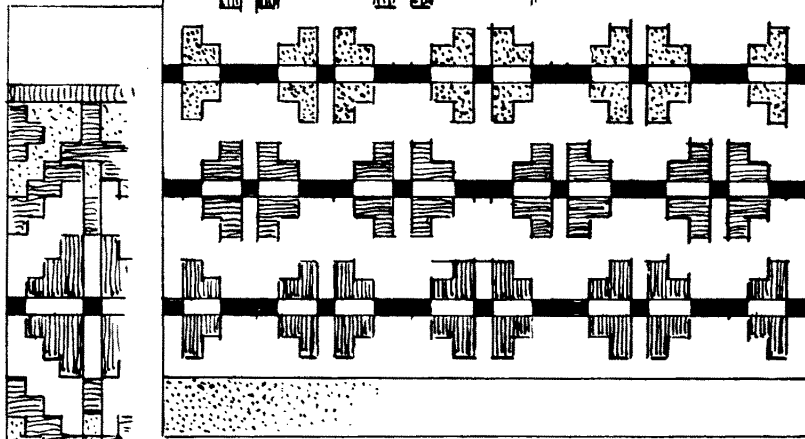
(b)



Sinking Shed

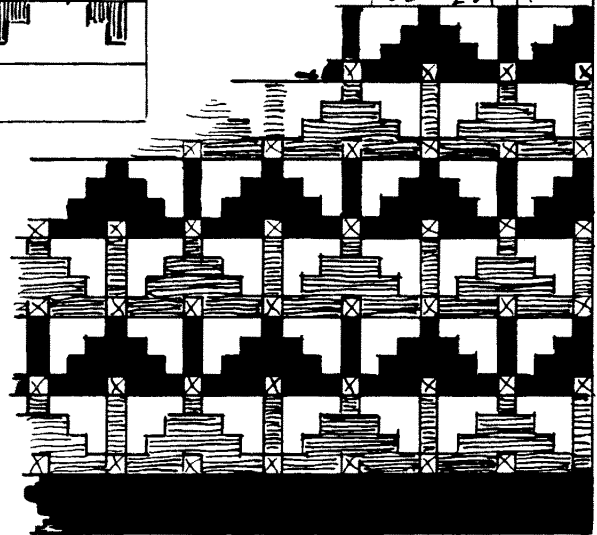


Rising Shed

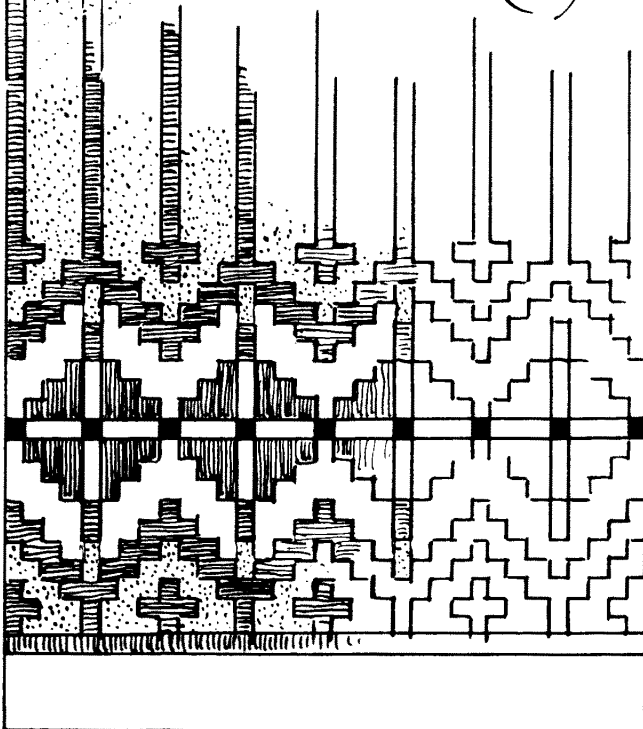


(a)

4 3 2 1 2 3 4 1 4 3 2 1

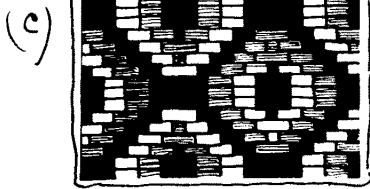
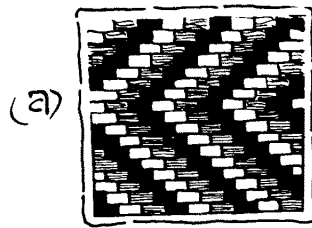
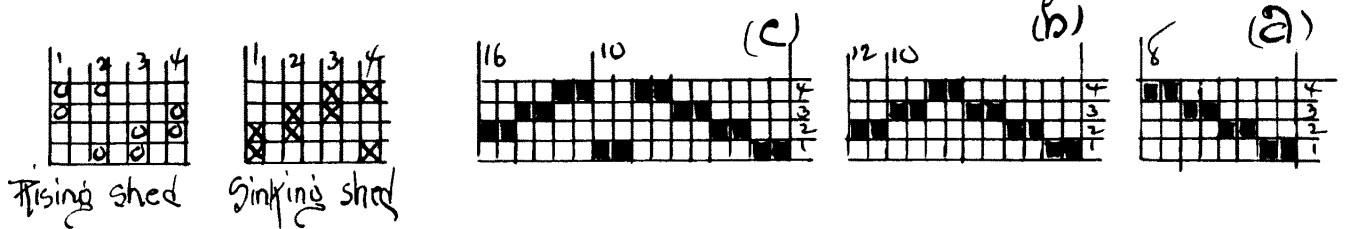


(c)



The above designs merely suggest the pattern possibilities of this weave. Many other figures are possible. All patterns are treadled: 1, 2, 3, 4, and repeat. The figures being produced by changes of color. When all four sheds are woven in the same color a solid color-effect results.

Indian Saddle-Blanket Weave: (2-c)



Method (2-c). The Indian saddle-blanket weave is in many ways similar to the preceding technique, but the effect is entirely different. As woven by the Navajos, the warp is a hard-twisted single-twist yarn and the weft a somewhat coarser yarn of the same type with a looser twist. For our purposes, a cotton carpet warp may be used, at a setting of 12 ends to the inch, threaded double as shown on the draft. The weft may be a medium weight rug-yarn, either wool or cotton. If a coarser weft is used the threading should be made with three threads alike instead of two. No tabby is woven between pattern shots, but two tabby treadles may be added to the tie-up for the weaving of headings. The beat should be firm, and the warp entirely covered. The pattern effects are produced, as in the previous weave, by changes of color, but the effects depend on the use of three colors and four sheds, with a repeat of twelve shots as indicated below: colors (d) dark, (m) medium, (l) light. These three colors may be black, red and white; black, grey and natural; black, grey and tan. Of course other colors may be used if desired but these are the usual Indian colors

Treadle (1),	(d)	treadle (2),	(m)	treadle (3),	(l)	(4),	(d)
"	"	(m)	"	"	(l)	"	(d)
"	"	(l)	"	"	(d)	"	(m)
"	"	(d)	"	"	(m)	"	(l)

Repeat.

This treadeling woven continuously on draft (a) will produce diagonals, which may be varied by reversing the treadeling to produce a zig-zag effect. If woven in this manner on drafts (b) or (c), wavy lines will result. For the diamond effect sketched weave the treadeling as given five times and reverse, using draft (c). For a similar diamond figure on draft (b) weave the treadeling four times and reverse.

Perpendicular stripes may be woven using three sheds only, as: treadle (1), (d) treadle (2), (m); treadle(3), (l), and repeat.

By using these treadelings in various combinations, interesting border designs may be produced. For instance, on draft (c) weave a series of waves, and reverse. Then weave perpendicular bars, and repeat.

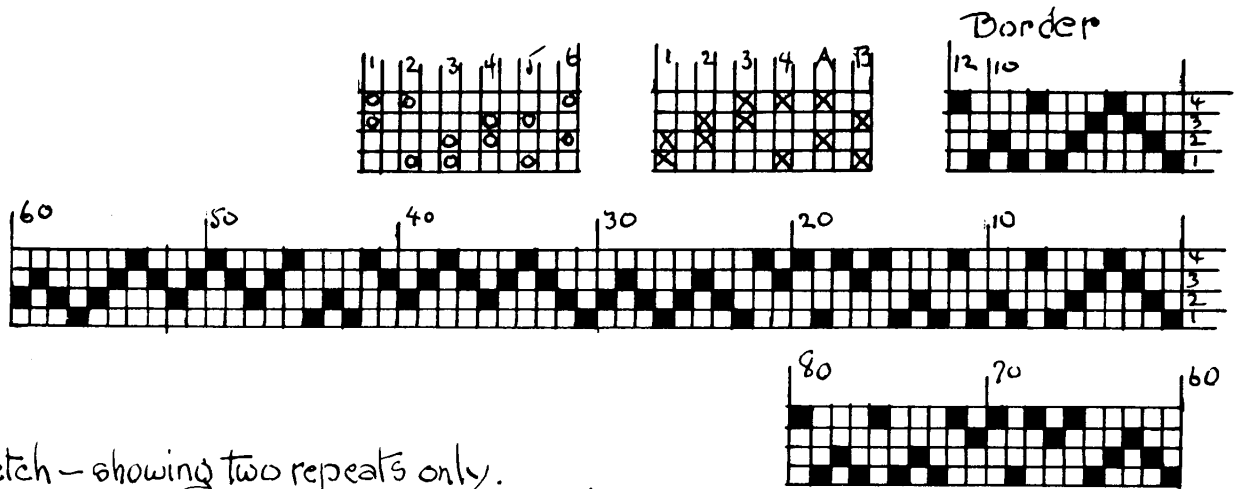
As in the previous weave, this weave tends to narrow in and the edges are sometimes troublesome and require special attention. The Indian weavers overcome the edge-trouble by putting a twist of three cords along each edge. This makes a very handsome finish, and though it requires extra trouble the same thing may be done on the loom. Twist the cords for a single rug and tie them to the back beam of the loom. Of course they must be adjusted each time the warp is taken up. In weaving lift one strand of the twist with the fingers -- a pick-up stick may be inserted to hold the shed thus formed. Take all three pattern shots through this same shed. For the next three shots take up the next strand of the twist in the same manner.

On a loom equipped with sufficient harnesses this twist may be set as a two-thread or three-thread leno operated by special treadles, both feet being used in weaving.

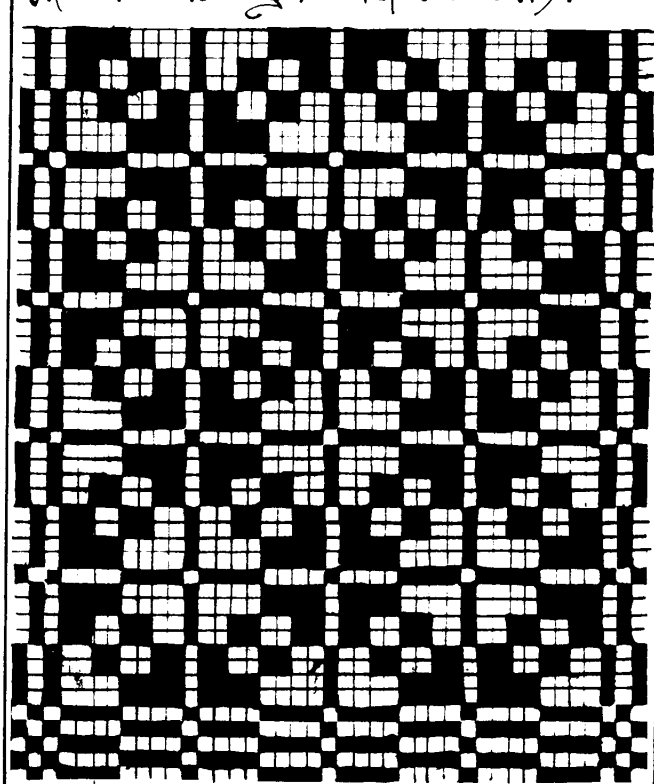
However, if the three wefts follow each other through the sheds, and care is taken to carry them around each other at the edges a satisfactory edge may be produced.

Method (3). Rugs woven in the "Crackle" weave are more practical than those in the Colonial overshot patterns, and may be woven to give a Colonial effect when this is desired. The fabric has much the same construction as that produced by the "Summer-and-Winter" weave and shows no long skips. For large rugs made in several strips sewed together, and for room-size carpeting, this technique is excellent. However it has some disadvantages for small rugs as the fabric cannot be made heavy enough to lie solidly on the floor, and rugs in this weave tend to scuff up. Best results are obtained by weaving in cotton chenille or wool rug-yarn, though light weight cotton rug-filler, and even fine-cut rags may be used if desired.

Warp for crackle weave rugs should be ordinary cotton carpet-warp set at 12 ends to the inch, and with wool pattern weft the tabby may be like the warp. For chenille rugs, however, it is better to use the material in a single strand for tabby and in a double strand for pattern.



Sketch - showing two repeats only.



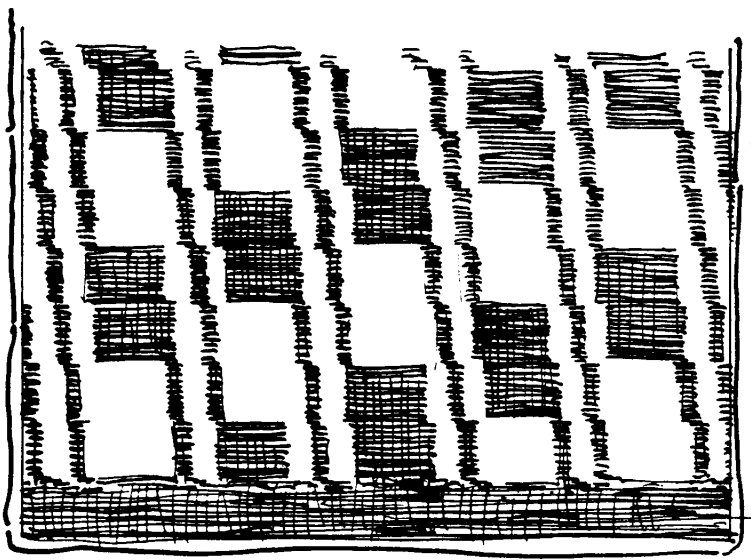
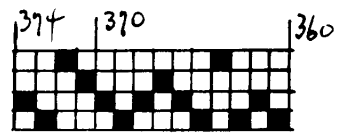
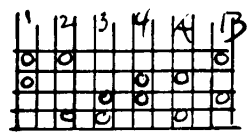
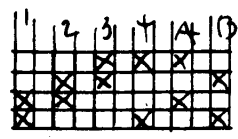
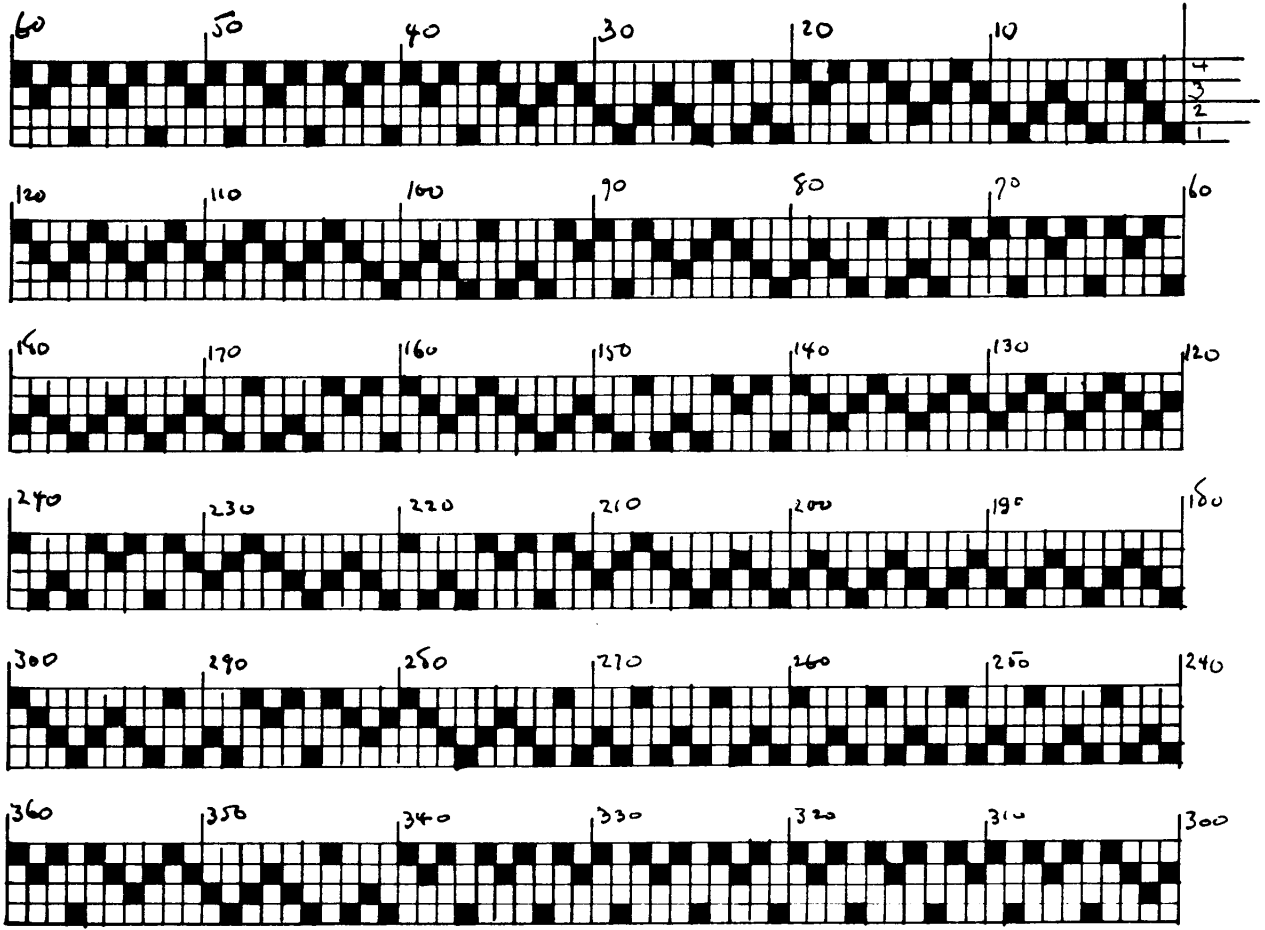
Thread:	Border	- - - - -	12	threads
	Pattern	4 times	320	"
	Border		12	"
	"	first 7 threads	7	"
			<u>351</u>	

Weave:	Border			
	Treadle	4,	3 shots	
	"	2,	3 "	twice

Pattern				
Treadle	4,	3 shots		
"	2,	6 "		
"	3,	6 "		
"	1,	6 "		
"	4,	6 "		
"	2,	3 "		
"	4,	6 "		
"	1,	6 "		
"	3,	6 "		
"	2,	6 "		
		Repeat		

Border				
Treadle	4,	3 shots		
"	2,	3 "		twice
"	4,	3 "		

Crackle-Weave - Technique (3) Pattern: "Stepping Stones."



Weave with a tabby shed between pattern shots.
 Treadle border: treadles 1, 2, 3, 4, one shot each. Repeat as desired.
 Pattern: treadle 1, 11 shots
 " 2, 11 "
 " 3, 11 "
 " 4, 11 "
 Repeat

Method (4). The "Summer-and-Winter" weave is a practical technique for rug-making, with the limitations noted for rugs in Crackle weave. That is, it is suitable for large rugs or room-size carpeting but small rugs are too light to lie well on the floor.

The pattern possibilities are, of course, the same as for any fabric in this weave, and as a large number of patterns have been published -- in the Shuttle-Craft Book, the Guild Recipe Book, the special pamphlet on this weave, etc., etc., it seems unnecessary to give additional patterns here. Many of the patterns given for Method (5) may be woven in ordinary Summer-and-Winter weave if desired.

For rugs in Summer-and-Winter weave, use cotton carpet warp set at 12 ends to the inch, with tabby like the warp. For pattern weft use a medium weight rug-wool and treadle "one and one" using two pattern shots to each "unit" of the weave, instead of four shots to each unit as is customary with fine material.

(A special pamphlet on the Summer-and-Winter weave, price \$1.00, is available through the Shuttle-Craft Guild, and will be found useful by those unfamiliar with this interesting weave.)

Method (5). In my opinion the two-warp weave offers hand-weavers the most practical and interesting technique for the making of rugs.

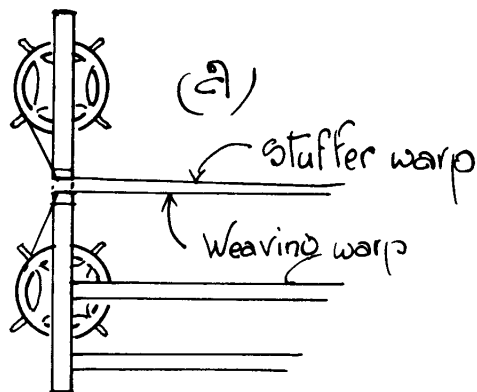
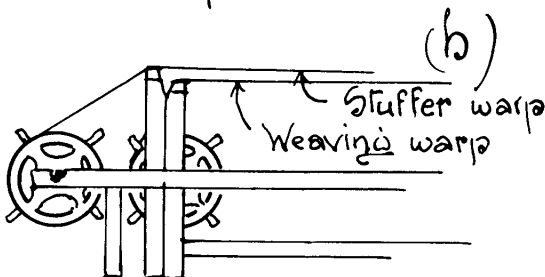
For this weave it is necessary to use a loom equipped with two warp-beams. This presents no great difficulty. The second beam may be set in the loom on brackets, behind the regular beam; or it may be set above the regular beam, as sketched. In either case a second back-beam must also be supplied so that the two warps do not interfere with each other. The use of two warp-beams is necessary because the two warps are woven at different tensions and one warp must be a good deal longer than the other.

The advantages of the weave for rug-making are: a fabric as thick and heavy as one chooses; a firm, solid construction with a smooth surface; very interesting pattern possibilities. Moreover, the "stuffer" warp used to give the fabric weight, may be an inexpensive material.

Warp for this type of rug may be ordinary cotton carpet-warp for both the "weaving" warp and the "stuffer" warp. For very satisfactory results the former may be set at 6 ends to the inch and the latter at 24 ends to the inch. If a coarse weft is used, such as an ordinary wool rug-yarn or a light-weight cotton rug-filler, the weaving warp should be one and three quarters the length of the stuffer warp. That is to say, for 20 yards of stuffer warp there should be 35 yards of weaving warp.

If stuffer warp and weaving warp are different in color it is a convenience in threading. As the stuffer warp does not show at all on the surface of the fabric it may be "natural", with the weaving warp in brown, tan or ecru, or in a color to suit the weft to be used.

Methods of installing a second warp-beam



Threadings for the two-warp weave are similar in form to threadings for the Summer-and-Winter weave, as shown by the drafts, pages 24 and 25, and may be written in "short" form for convenience. Each "unit" of the weave, however, consists of ten threads instead of four -- two threads on harness 1 and harness 2 (weaving warp) and eight threads of stuffer warp threaded on a pattern harness.

Four-harness patterns are limited to two blocks, as in the summer-and-winter weave, and patterns of six blocks may be woven on eight harnesses. In fact any draft for the summer-and-winter weave may be threaded in the manner indicated at (c) on the diagram, page 23, and used for this rug weave. Patterns in pick-up weaving, to be described later, can be produced on a four-harness threading as easily as on an eight-harness set-up.

The best weft material for rugs of this type is a good wool rug-yarn. But a light-weight cotton rug-filler, cotton chenille, and even well prepared rags may be used.

Of the two patterns given on page 23, (a) is designed to give a figure of two alternating blocks of the same size, repeated twice. At the setting suggested there will be three units of the weave to the inch. Suppose it is desired to make a rug on this pattern 32" wide: each of the four blocks will then be 8" wide and will cover 24 repeats of the unit. Thread the "Block A" unit 24 times, then the "Block B" unit 24 times, and repeat. Use a 12-dent reed and sley a single thread of weaving warp through the first dent; four threads of stuffer warp through the second dent and so on.

For Pattern (b) -- designed to weave a plain border all around -- suppose this is to be a 24" rug with 3" borders on the sides: thread 9 repeats of Block A; 54 repeats of Block B; 9 repeats of Block A. (This is a good pattern for a rag rug: use rags in a plain color with rags in a many-colored figure of some sort. New Material should be used.)

For Pattern No. (1) in three colors as shown, weave as follows: Any three colors may be used, but suppose we use black(b); red (r) and white (w). For the plain border at the top and bottom weave treadle 1; treadles 3 & 4 together; treadle 2; treadles 5 & 6 together -- all shots (r) -- and repeat for the depth of border desired. For the first block of the pattern treadle 3,(w); treadle 4(b); treadle 5,(w); treadle 6,(b), Repeat three times. Then treadle 3,(r); treadle 4,(b); treadle 5,(r); treadle 6,(b). Repeat the first four shots three times. For the second block of the pattern treadle exactly the same, with the colors reversed: treadle 3,(b) treadle 4,(w); treadle; treadle 5,(b); treadle 6,(w), and so on; (tie-up c-1, c-2).

For Pattern (2) weave all across as for the plain border, with all shots in white. Weave the stripes in black and red, using the pattern treadeling. It seems unnecessary to give treadeling directions for Pattern (3)

For Pattern (4) -- on threading (b) -- weave a plain border across the bottom and repeat the four pattern shots all the way for the body of the piece. Alternate the dark and light weft for the border as well as for the pattern treadeling.

All these rugs will be the same on both sides, except that in Pattern (4) the border will be dark and the center light on one side of the rug and on the other side the border will be light and the center dark.

Any two-block pattern may be produced in this weave in the same manner. But patterns with much one-unit detail will not weave as well as the bolder and simpler patterns.

The stuffer warp must be kept at a firm tension and the weaving warp fairly slack. When the weft does not beat up to cover the warp completely it is due to too much tension on the weaving warp and this must be released from time to time during weaving. The beat should be as firm as possible.

The treadeligs as given are based on tie-ups (c-1) and (c-2). If eight treadles are available it is more convenient to make the complete tie-ups as given at (c-3) and (c-4), which permit weaving with one foot.

On eight and ten harnesses more elaborate patterns may be woven in exactly the same manner. Any "short draft" written for the summer-and-winter weave may be carried out in the two-warp weave, each "unit" being threaded as shown at (c), page 24, with two threads of weaving warp on the two front harnesses and eight threads of stuffer warp on the pattern harness indicated by the draft. Tie-ups, however, are different from the tie-ups for the summer-and-winter weave. Complete tie-ups for the more elaborate patterns require many more treadles than are found on ordinary looms, and to weave these patterns in a mechanical manner would require draw-cords and a "simple." However, with a bit of ingenuity and a bit of acrobatics -- several treadles being depressed at the same time -- any figure may be woven on a "skeleton" tie-up as given on page 25.

Each block of the figure is woven with four shots -- two shots in each of the two colors used. For the first shot treadle to raise all the pattern harnesses except those to be woven in the pattern color, together with treadle 1 which raises the threads of the weaving warp on harness 2. Weave a shot of dark material. For the corresponding shot in light material, raise the pattern harnesses that were down on the first shot, again with treadle 1. Repeat these two shots using treadle 2 instead of treadle 1. This process, on complicated shots, may be simplified by the use of a pick-up stick: treadle on 1, and insert the pick-up stick under the raised threads. Make the treadeling for the figure and weave. Make the treadeling for the back-ground and weave. Take out the pick-up stick; treadle on 2 and put it back under the raised threads. Treadle and weave as before. Repeat as required to produce the figure.

This may sound complicated and laborious, but in practise is entirely practical and fairly rapid. However if one should plan the making of these rugs as a business, with quantity production, it would be advisable to equip the loom with a set of draw-cords.

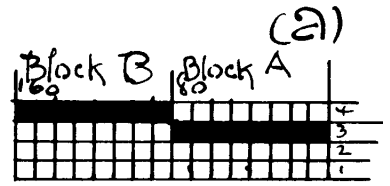
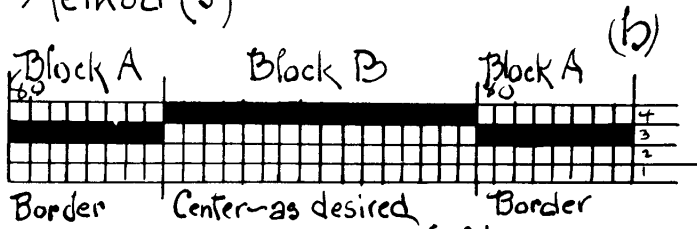
Patterns may be woven in more than two colors if desired. Several patterns in three colors will be found on page 25. When woven in this manner the pieces are not, however, reversible as the wrong side effect is confused. Also, as more weft-yarn is woven across the under side than over the upper surface, these rugs tend to curl up on the ends. This tendency may be corrected by weaving plain borders in one color across the ends. Also one may weave a fourth color on sheds 1 and 2 as a corrective. For this the process is as follows: weave the pattern shots with treadle 1 as explained, then weave a shot all across on treadle 1, using a neutral color -- and a somewhat finer material if desired. Weave the pattern using treadle 2, and then a shot all across on treadle 2 using the neutral fourth color.

If the rug is to be hemmed, rather than fringed, weave a heading in weft-yarn using treadles 1 and 2 alternately. Weave in this manner for $1\frac{1}{2}$ " or 2". Insert a lease stick or strip of heavy cardboard between this heading and the unwoven stuffer warp below. Then weave the border of the piece on four treadles as directed and proceed with the pattern. On the other end, after weaving the border, again weave a heading on treadles 1 and 2 alone. These headings may then be turned back and hemmed.

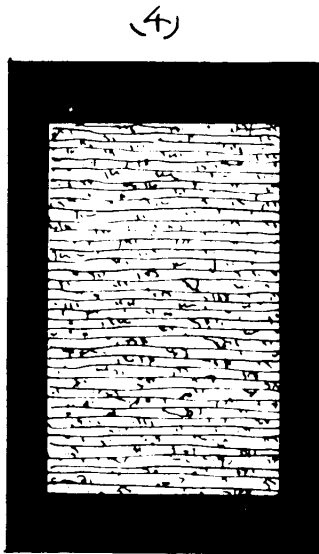
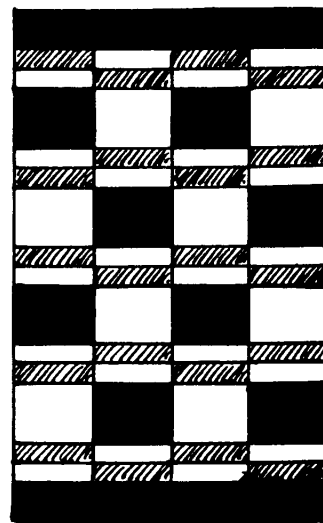
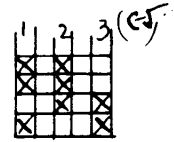
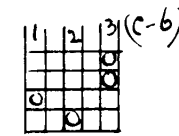
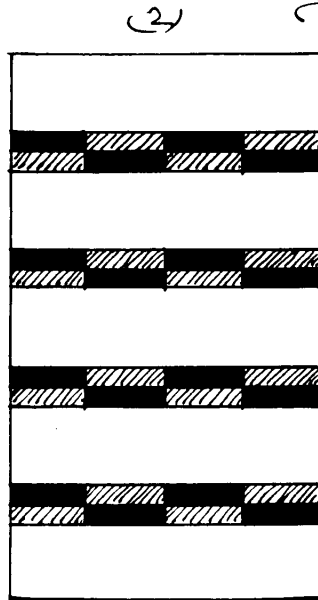
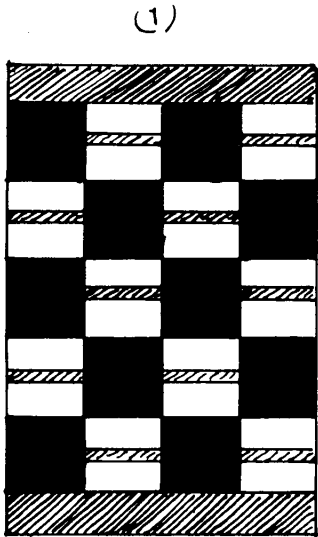
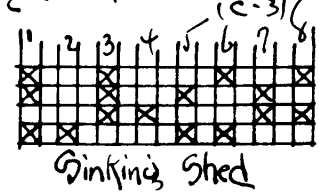
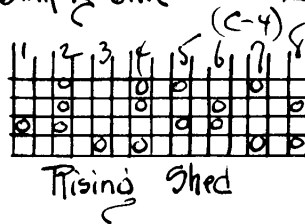
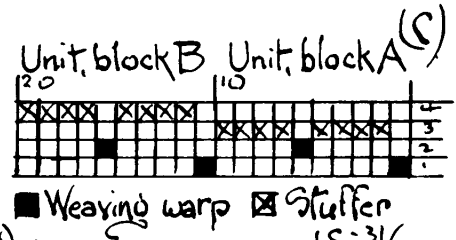
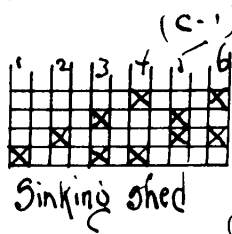
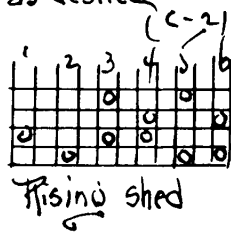
The eight-harness draft on page 25 may be woven in a great variety of figures, a few of which are illustrated. The pattern consists of a twill arrangement of six blocks, repeated twice. If threaded as shown on the draft, with seven units for each pattern block, the rug will be 28" wide. For a wider rug thread eight units under each block, -- or nine or ten units to the block as desired.

On a ten-harness loom more elaborate figures may be woven -- or the two additional harnesses may be used for plain side-borders, permitting the weaving of borders all around any of the eight-harness patterns illustrated on page 25.

Two-Warp Technique - Four-Harness Method (s)



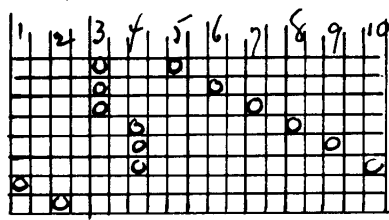
Tie-Ups



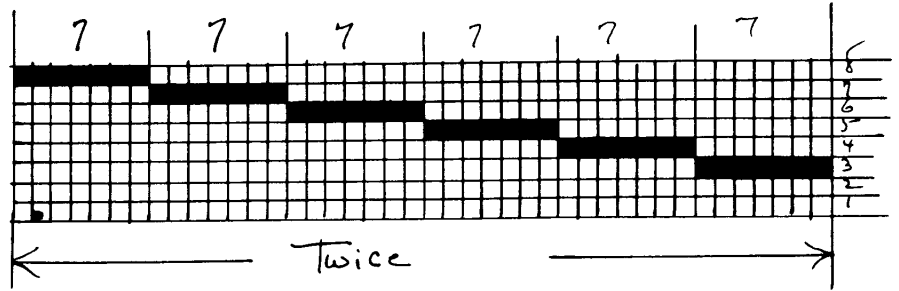
Patterns (1), (2), and (3) woven on draft (a)
 Pattern (4), woven on draft (b)

A Group of 8-Harness Patterns - Two-Warp Technique

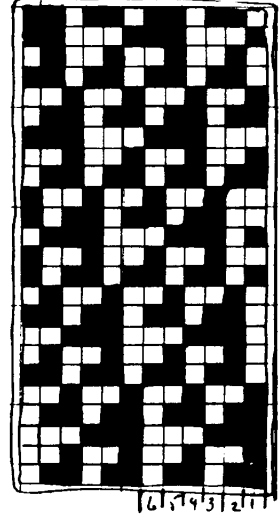
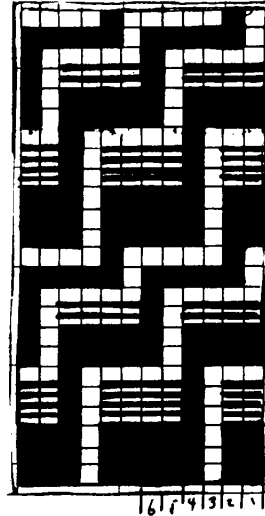
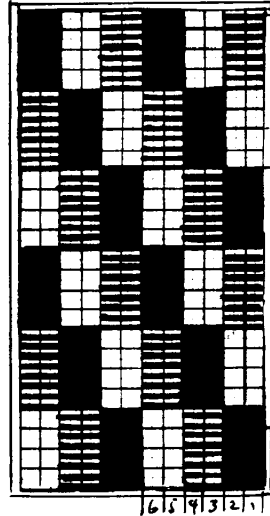
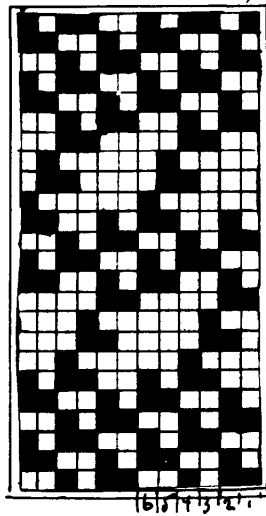
Step Pattern



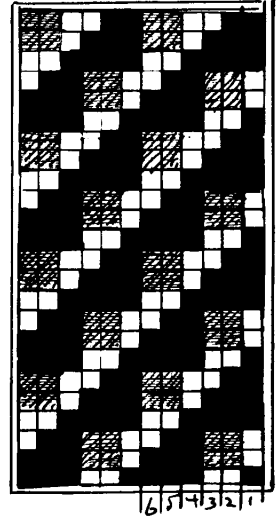
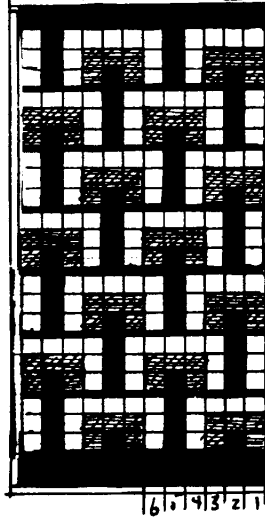
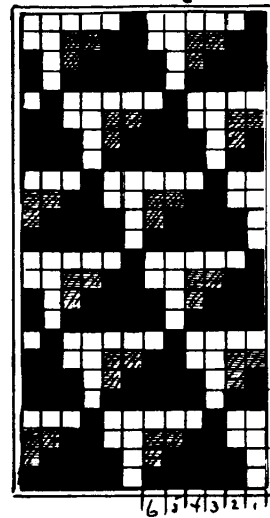
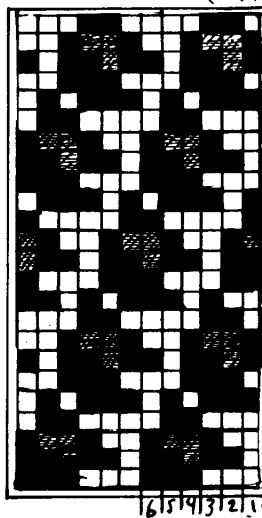
Skeleton tie-up



Two-Color Patterns



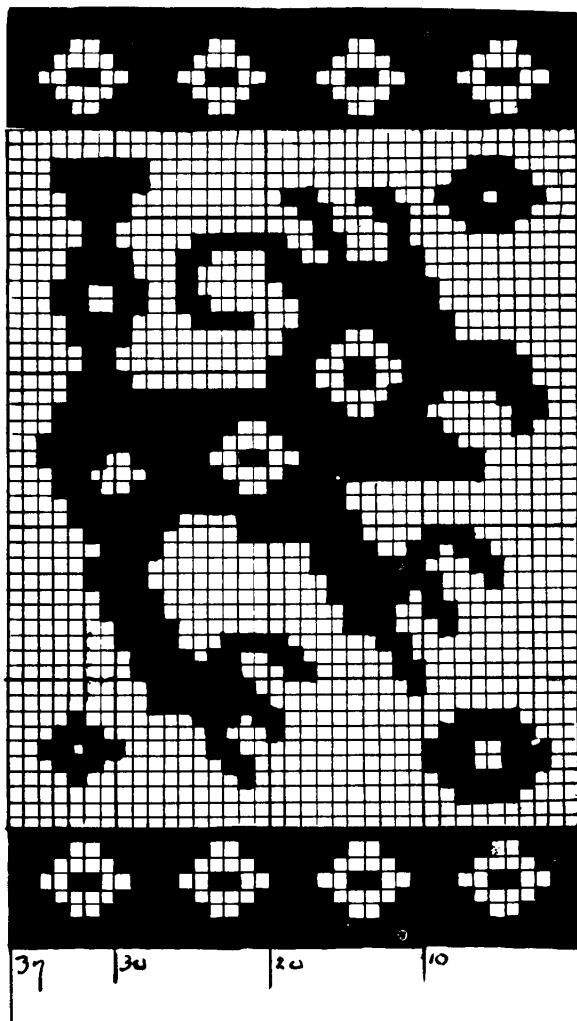
Three-Color Patterns



One of the most interesting ways to weave rugs on the two-warp set-up is by the pick-up method. The pick-up stick is a remarkable tool and permits the production of many elaborate weaves and patterns -- on the simplest type of equipment -- that could otherwise be woven only on looms with a great many harnesses or on complicated draw-ooms.

The pick-up technique in the two-warp weave is a particularly simple form of pick-up weaving and permits the production of any pattern arranged for the double weave -- for that matter, for any figure that can be drawn on cross-section paper. And the weave can be produced on four harnesses as easily as on eight or ten.

The process is as follows: only three treadles are required -- one that raises all the stuffer warp and the two treadles that operate the weaving warp. Treadle to raise the stuffer warp and insert a pick-up stick under the threads corresponding to the desired figure. Allow two four-thread groups to each unit of the weave. With the stick in place, treadle on treadle 1, which raises half the weaving warp. Weave a shot of the background color. Treadle again on 3, to raise the stuffer warp, and pick up the background -- all the part just woven. Treadle again on 1 and weave a shot of the pattern color. Treadle on 3 and make exactly the same pick-up made for the first shot. Treadle 2 and weave background. Treadle 3 and make the same pick-up as for the second shot and treadle 2. Weave pattern. These four shots constitute a unit of the weave and are repeated throughout.



The only difficulty about this weave lies in the fact that the weaving warp must be kept at a lighter tension than the stuffer warp. The sheds will for this reason be shallow and the ordinary heavy rug-shuttles cannot be used. Flat "poke-shuttles", long enough to go all across the loom, must be used instead. These are somewhat unwieldy but one becomes accustomed to handling them with a little practise.

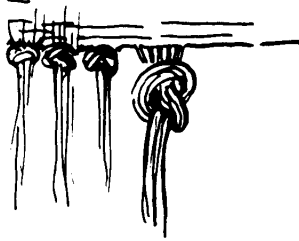
Patterns in more than two colors may be woven in this technique.

The Shuttle-Craft Guild pamphlet on the double weave contains many good patterns suitable for use in this pick-up technique, and other suitable patterns are included in the Guild Recipe Book and have appeared from time to time in the monthly Bulletin. The pattern illustrated is an adaptation of an ancient Peruvian puma or cat-figure. It is designed on 37 spaces. For a small rug warp 74 units and in weaving allow two units, or four 4-thread groups of stuffer warp, to each crosswise space. Weave either six or eight weft-shots to each space in the perpendicular direction.

This pattern may be woven in three colors, the eye of the beast, the spots on it's body, and the figures in the border being in a different color from the background. However, when woven in this manner the rug will not be reversible, as previously noted.

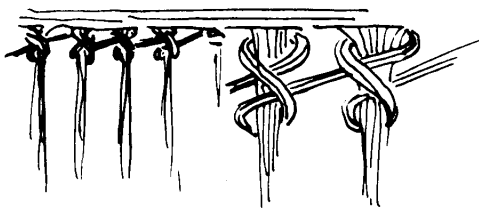
Various Fringe-Ties

(a)



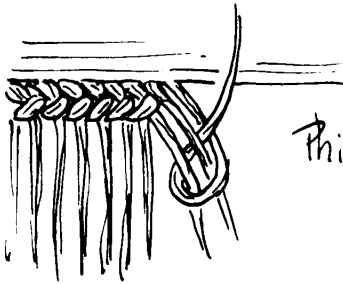
Ordinary rug-knot

(b)



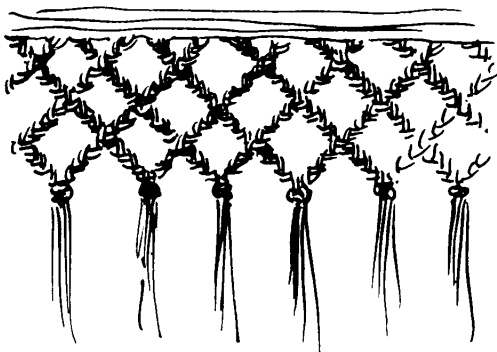
Neolithic Tie

(c)

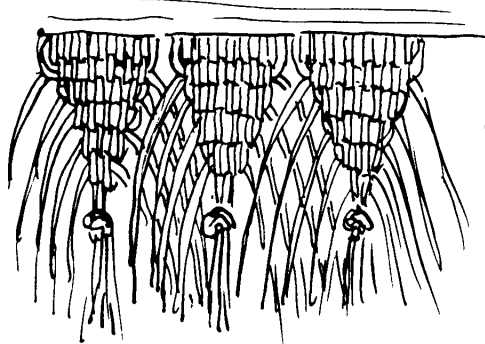


Philippine

(d)



Mexican



"Sword-Point"

Whether or not to finish a rug with a fringe is a matter of taste, and also of fashion. Rugs in which the warp is scanty -- making a thin fringe of uninteresting cotton rug-yarn -- usually look better if finished with a heading and a hem than with fringes. But if a fringe is desired, there are several methods of tying.

The ordinary tie, shown at (a), is easy to make, but rather lumpy in effect unless tied in small strands.

The extremely ancient method shown at (b) is practical and handsome, and has one great advantage over other ties -- it may be made on the loom. A separate strand of material is used, making two half-hitches around each group of warp-ends. These groups should be of a few ends only, and the knots should be drawn tight.

An excellent fringe-tie for a close-set warp is illustrated at (c). It produces the effect of a narrow braid. Two or three ends may be used for each strand. Make a half-hitch with strand 3 around strands 1 and 2, bringing the end upward as illustrated. Drop strand 1, bring strand 3 down close to strand 2 and with strand 4 make a half-hitch around strand 2 and 3, and so continue.

For the Mexican tie, illustrated at (d), make 3" three-strand braids. Weave these braids together as illustrated, and lash or knot each two braids together. This takes time, but it is good looking.

For the "sword-point" effect, illustrated at (e), select 11 strands of warp-ends. With the fingers pick up a "shed, taking up strands 2, 4, 6, 8, and 10. Through this shed take the outside strand on the left toward the right, and the right-hand strand toward the left. Pick up the opposite shed and again take through the two edge strands. Repeat till the point is reached and secure with a knot or lashing. Repeat with the next group of 11 strands.

There are, of course, other weaves that may be used for rugs, though the techniques described above are those most frequently used and have proved the most practical.

I have given no directions for the "shag" rugs sometimes made by hand weavers, as these rugs do not seem to me very practical and the fad for them does not seem likely to continue. However, I can refer anyone wishing the information to a leaflet supplied by the Lily Mills Company, which gives the directions.

The essentials for a successful rug project are: a solidly constructed loom, the selection of a weave, materials and a pattern to suit the special purpose, a good choice of colors, and a heavy beat. The heavier the better.

Mayon. Atwell