

CARD WEAVING



By MARY M. FITZGERALD

Weaving on a CARD LOOM



By MARY M. ATWATER

CARD-WEAVING," or "Tablet Weaving," as it is sometimes called, is a very ancient, very interesting and ingenious little craft with many practical possibilities. It is a true form of weaving, as technical as weaving on a large loom, and though limited to the making of narrow fabrics it provides a highly efficient method of making such things as belts and girdles, hat-bands, binding, handles for bags, gimp, straps for sandals, pack-straps, wrist-watch ribbons, galloon, fringes. In Arabia the process is used to this day for the making of ornamental camel-harness and even for saddle-girths.

The fabric produced is what is known as a "warp-face" fabric. That is to say, the effect is entirely in the warp—or the lengthwise strands—the weft or cross-wise strands serving merely as a binder. The fabric has a peculiar structure in that each four threads of the warp are twisted together for the entire length of the weaving, giving it great strength in the lengthwise direction. The fabric is four-ply and firm, thick and smooth.

The equipment required consists of a set of square cards or tablets, with holes in the corners. The size of these cards is a matter of choice, but the dimensions as given at (1), Diagram One, will be found convenient for most purposes. As many as a hundred cards may be used in a single piece of work, though as a rule from twenty to sixty are sufficient. The width of the woven piece depends on the number of cards, the weight or "grist" of the yarn used, and to some extent on the manner of weaving. A width of four inches is about the practical limit.

A small shuttle may be used as a convenience, but is not strictly required, and a beater of some sort may also be used. The shuttle may serve as a beater, or an ordinary kitchen knife serves the purpose efficiently.

Nothing else in the way of equipment is required, except a stationary object of some kind to which to attach the end of the warp—a hook in the wall, a door-knob,

a bed-post, the post of a porch railing, a tree-trunk will serve. A special frame over which to stretch the warp is sometimes used, but unless this is very long it is a detriment rather than a help.

MATERIAL

A variety of materials will be found suitable for card-weaving. In fact almost any material except soft, fuzzy and irregular yarns can be used. Coarse rug-yarns may be woven on the cards, but for this it is advisable to have large wooden tablets instead of card-board cards. Extremely fine materials may also be woven without difficulty.

An ideal material for general purposes is Lily "Frost-Tone" cotton. This material was used for most of the woven samples illustrated. Another excellent material is Lily Six-strand Floss, which produces a very silky and beautiful effect. Crochet cottons and knitting cottons are also satisfactory materials, and for wrist watch ribbons and very fine pieces sewing threads, or single strands drawn from the six-strand material are entirely practical.

As the decorative effect in card-weaving depends entirely on color it is desirable to use strong, brilliant colors in the warp for most of the weaving of this type.

The weft material should usually be like that used for the warp, or a material of the same grist, and in the color of the border. For a thick fabric a weft somewhat coarser than the warp may be used, and for a man's belt—which should be hard and stiff—it is well to use a hard-twisted material of some kind for weft.

PATTERNS

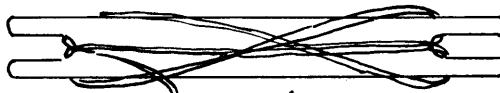
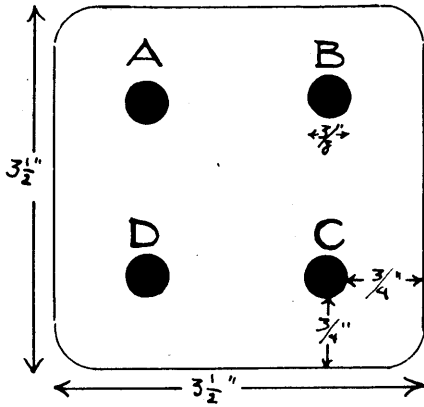
The patterns in card-weaving depend on the arrangement of the colors in the warp and on the manner in which the cards are manipulated during weaving. For this one must have a "draft" on which is shown the arrangement of the colors and the manner in which they are to be threaded through the holes in the cards. A group of simple drafts will be found on Diagram Two.

Each square of the draft indicates a single thread of the warp, and the hatching indicates the color of the thread. Of course it is not necessary to use the colors as given on the draft, and a set of colors similar in tone or "value" may be substituted for those given. The colors as given are those used in weaving the sample pieces.

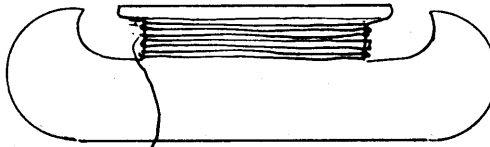
Each of the numbered perpendicular rows of four squares indicates the four threads of a single card, and the letters at the ends of the horizontal rows indicate the lettered holes in the cards. For example: in Pattern No. 1, cards 1, 2, 15 and 16 each carry four black threads to make a plain black border. Cards 3 and 14 carry four white threads each. Cards 4 and 13 carry three white threads and one blue—the blue thread being threaded through the hole lettered "A." Cards 5 and 12 carry two white threads, one blue and one red—the red thread through the hole lettered "A" and the blue thread through the hole lettered "B." And so on through the draft.

Diagram One

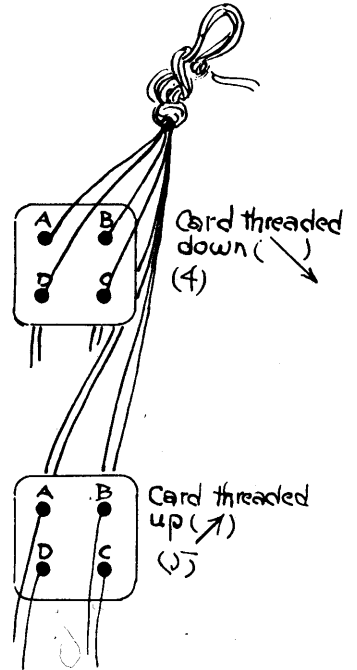
(1) Weaving Card



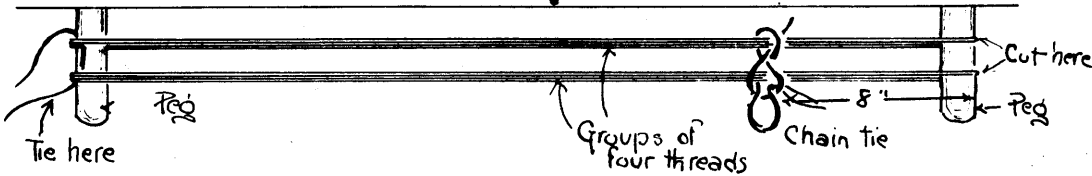
(2) Flat Shuttle



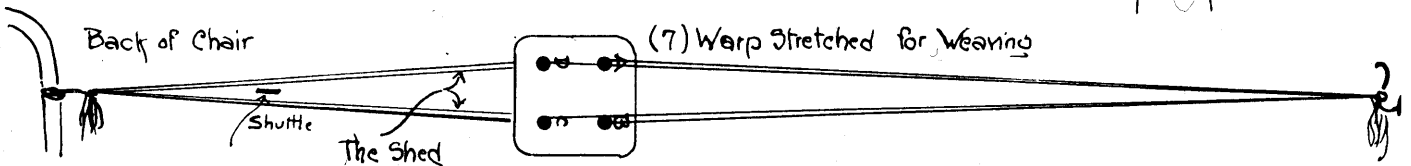
(3) Norwegian Belt Shuttle



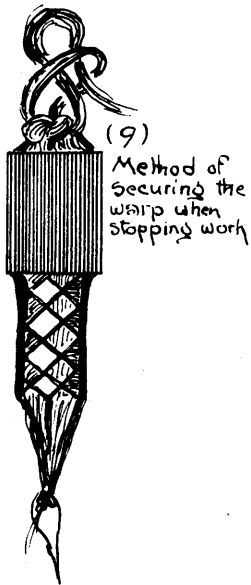
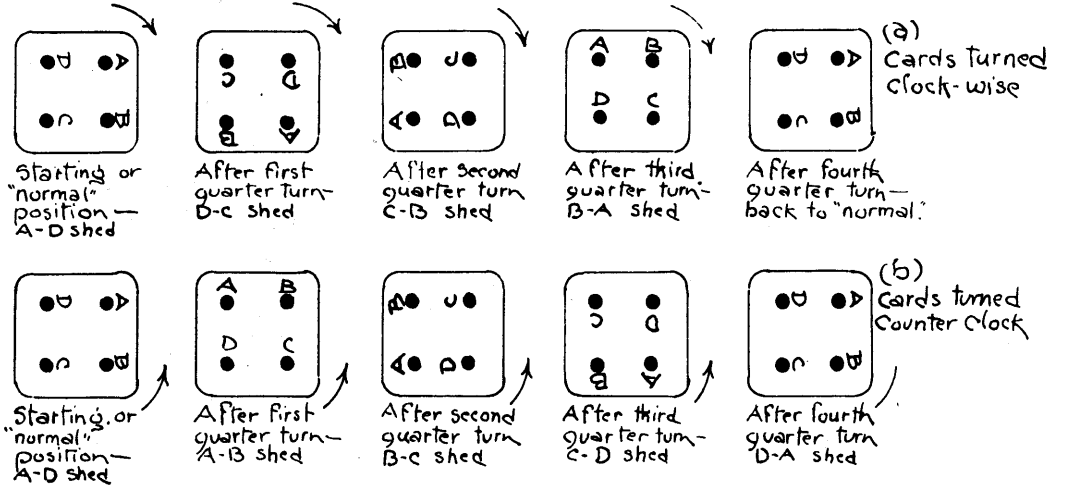
(6) Method of Winding



(7) Warp stretched for weaving



(8) Method of turning the cards



(9) Method of securing the warp when stopping work

The arrows below the draft indicate the direction in which the threads are to be taken through the holes in the cards: (➤) indicates threading from front to back, or down through the holes; (↗) indicates threading from back to front, or up through the holes. All four threads of each card must be threaded in the same direction. This point is illustrated at (4) and (5) on Diagram One.

WARPING

The first process in any form of weaving is making the warp. The number of threads required for the warp, and their color, depend on the pattern to be used, and to make the warp these threads must be measured off to the desired length and arranged in the order of the threading as indicated on the draft. If a weavers' warping board is available this is the most convenient frame over which to make a warp for card-weaving, but the warp may be made between two hooks or pegs or large nails in a wall, or over the backs of two chairs set the proper distance apart.

The length to make the warp depends of course on the desired length of the piece to be woven. An allowance of about 18 inches should be made for wastage and take-up. For a belt to be set in a buckle a length of from a yard and a quarter to a yard and a half will suffice. For a girdle with long fringed ends the warp should be two yards and a quarter to two yards and a half long.

The quantity of material may be determined from the warp-schedule that will be found on the diagrams to the right of the draft. For instance: to warp a yard and a half of Pattern No. 1, 33 yards of black will be required; 30 yards of white; 15 yards of blue; 18 yards of red; 96 yards in all. In Lily Frost-Tone material this will make a band three quarters of an inch wide.

In making the warp, follow the draft. For example: for Pattern No. 1 first wind four black threads for card No. 1; then four more black threads; then four white threads; then three white and one blue, and so on through the draft, tying off each group of four threads with a cord, about eight inches from one end of the warp, as indicated at (6), Diagram One. A double cord and an ordinary tie may be used, but the chain as shown on the diagram is more convenient.

When all the threads of the warp have been laid in this manner, tie the long end of the warp with a stout cord, and cut the warp above the tie, as indicated on the diagram. Chain the warp together below the tie to keep the threads in order during threading.

THREADING the CARDS

The next process is threading the warp-ends through the holes in the cards. Lay the chained warp on a table with the free ends toward you. To the right of the warp lay a stack of cards numbered (for Pattern 1) from 1 to 16, with the 16 on top. Select from the warp, close to the tie, the four threads of the first group on the extreme left and thread them through the holes in card 16—threading “up,” or from back to front, as indicated by the arrow. Lay the threaded card to the left of the warp. Now select the

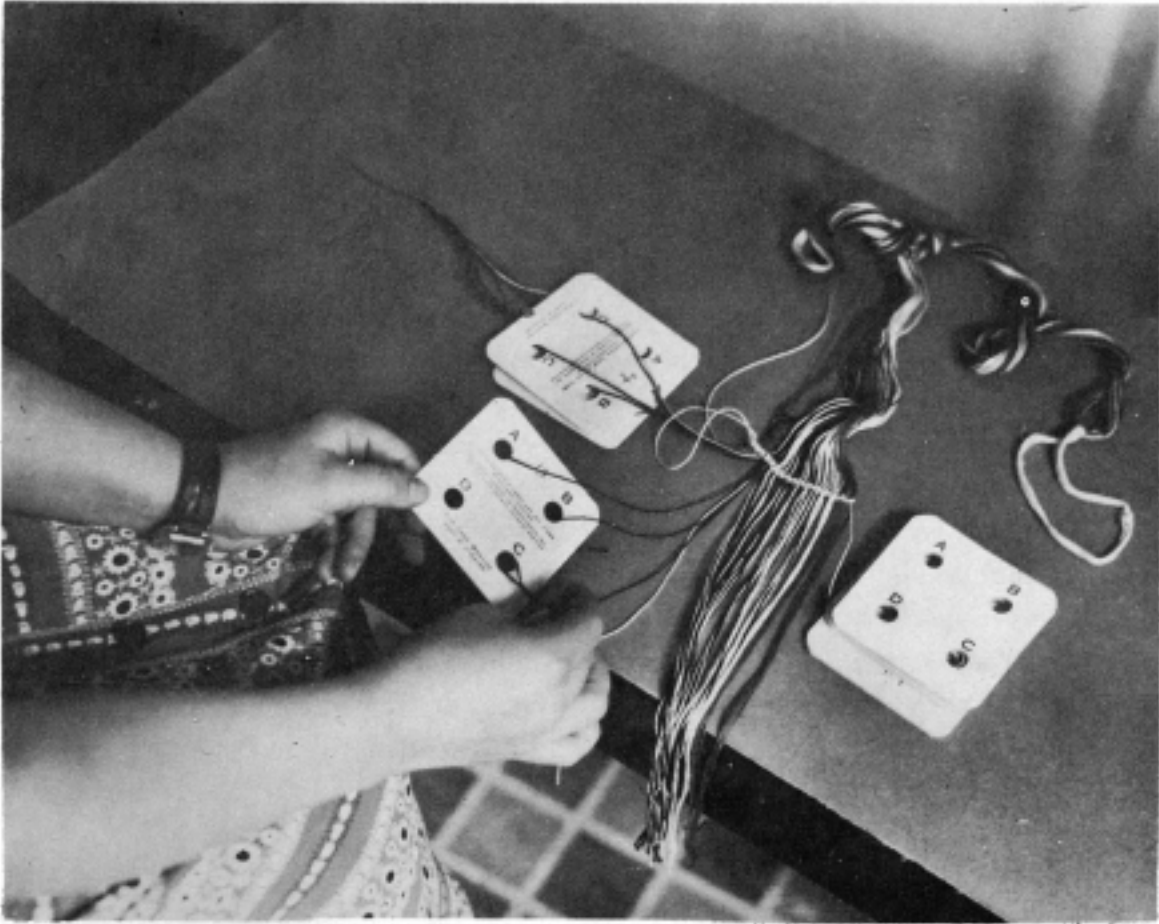


Illustration No. 1

next group of four threads and thread them "down" through card 15, and lay the threaded card to the left on top of the first card threaded. The lettered holes should correspond—that is the "A" should be on top of the "A" below, and so on. Illustration No. 1 makes this process clear.

STRETCHING the WARP.

When the threading is complete, attach the cord tied in the end of the warp to some solid support, and gathering up the free ends draw the threads tight, being careful not to leave any loose ends. Knot the ends together firmly and attach a stout cord. Tie this cord to the left side of the chair on which you propose to sit while weaving. The position of the stretched warp is shown at (7) on Diagram One. The cards should be in the position shown, with the A and D on top, and the cards facing to the right. Pull out the tie put in while warping, and you are ready to weave.

WEAVING

Note that as the cards hang in the stretched warp there is a separation between an upper and lower strand. This is called the "shed," and through this shed the shuttle is passed for the first shot. Now make the second shed by giving the cards a quarter turn in the clockwise direction, as shown at (8) on Diagram One, and bring the shuttle back through the new shed. It is a good plan to weave these first shots in a heavy material such as rug filler or a strip of rag, to make a foundation against which to beat. Give the cards a second quarter turn, clock-wise, and weave. Make four quarter turns in this manner and the cards will be back in the starting or "normal" position.

Each turn of the cards twists the warp in groups of four, and after each quarter turn this twist should be pressed back as firmly as possible with the fingers or a beater before the shuttle is passed. The quality of the fabric depends on the firmness of this beat. A loosely woven piece of card-weaving is useless. The weft thread controls the width of the weaving and should be drawn just tight enough to bring the warp-ends close to cover the weft.

When four quarter turns have been made and the cards have returned to the normal position, give them a quarter turn in the reverse, or counter-clock, direction. It will be seen that this turn does not change the top threads of the warp. Press back the twist but do not pass the shuttle. Give the cards a second reverse turn, press back the twist and weave. Continue till four reverse turns have been made and the cards are again in normal position.

This is the complete process of weaving, and is the normal weaving for all patterns, though variations of pattern may be produced by turning the cards all one way, or by reversing after eight or twelve turns, and so on.

There is a trick about turning the cards. Hold the cards between the two hands with the fingers below and the thumbs above. Do not press the cards together, but turn them with an easy shuffling motion. If after the turn the shed is not clear, push the cards back and forth along the warp for a few inches and the shed will clear.

The position in weaving is shown on Illustration No. 2.

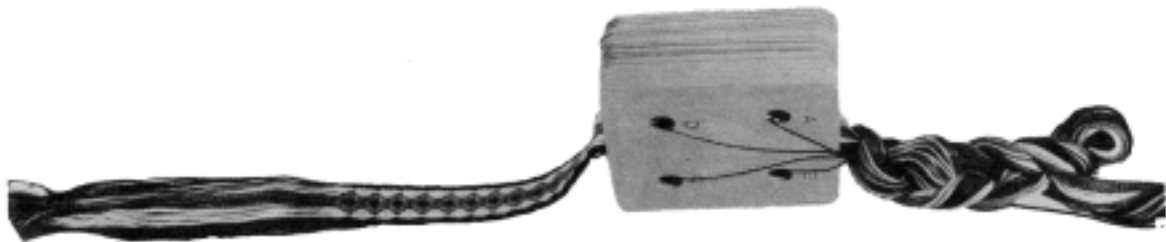


Illustration No. 2

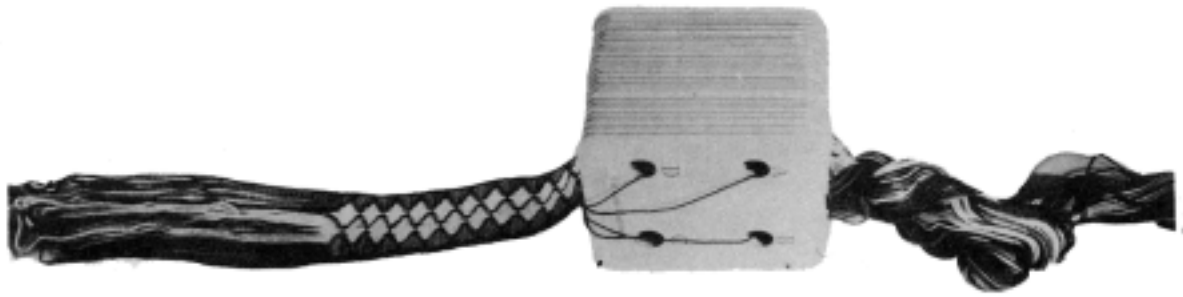
VARYING the PATTERNS

Though all patterns in card-weaving are normally and correctly woven with four turns clock-wise and four turns in reverse, beginning and ending on the normal or A-D position of the cards, many patterns lend themselves to a variety of little figures produced by turning the cards in different sequences. For instance, in weaving the piece on pattern No. 3 the cards were given 24 quarter turns clock-wise. Then four normal figures were woven with four turns each way. Then 24 counter-clock turns, and the normal weaving again. The weaving on Pattern No. 4 illustrates other variations. The normal figure was woven first. The second figure was woven with four turns each way, reversing on the D-C shed. The third figure was made by reversing on the B-C shed, and the fourth by reversing on the A-B shed. The lengthwise dart was made by turning twice in each direction—A-D, A-B, B-C, A-B, and back to A-D. The small arrow-heads result from turning in the same direction for 16 quarter turns.

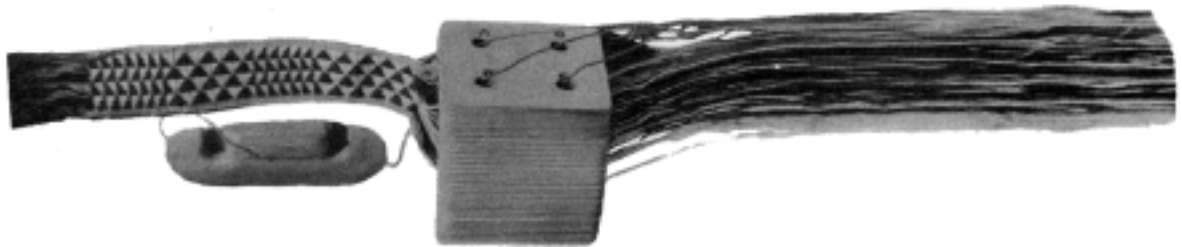
NOTES on the DRAFTS



Pattern No. 1 is too narrow for a belt but is useful for gimp or trimming. If turned all one way it weaves an arrow-head figure. The best weaving is the normal four and four method.



Pattern No. 2 should be woven in the normal manner.



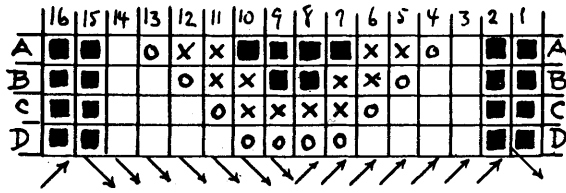
Pattern No. 3 is shown in two colors with a border in a different color. If desired, each of the little triangles might be in a different color, making a mosaic effect. It may be made as wide as desired by repeating the pattern figure of 12 cards as many times as necessary. In Lily Frost-Tone material, allow 24 cards to the inch in width.



Pattern No. 4 may be made wider by threading the first 30 cards of the draft as indicated, and then repeating from card 15 to the end. The variations have been described on page 8.

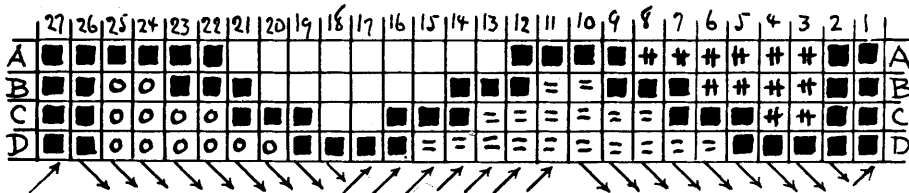
Diagram Two - A Group of Simple Patterns.

Pattern No. 1



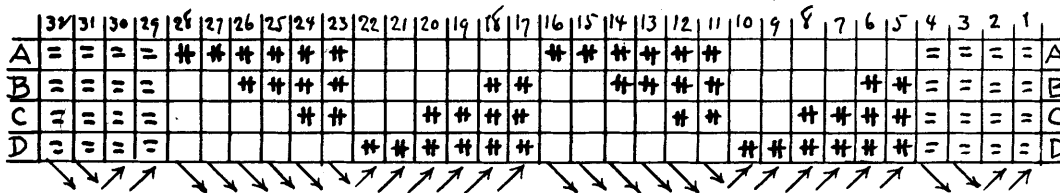
- Warp:
- Black, 22 threads
 - White, 20 "
 - Blue, 10 "
 - X Red, 12 "
-
- 64 "

Pattern No. 2



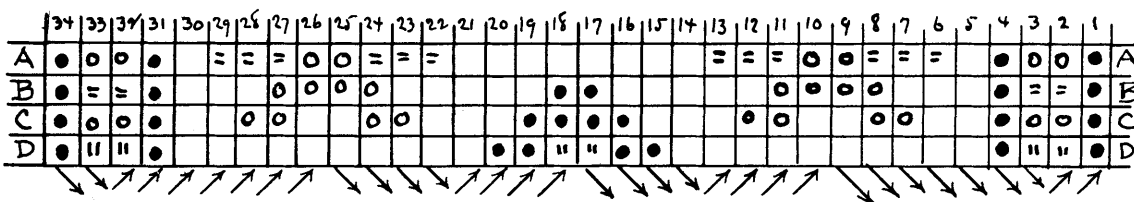
- Warp
- Black 48 threads
 - Blue 12 "
 - White 18 "
 - Orange 18 "
 - Green, 12 "
-
- 108 "

Pattern No. 3



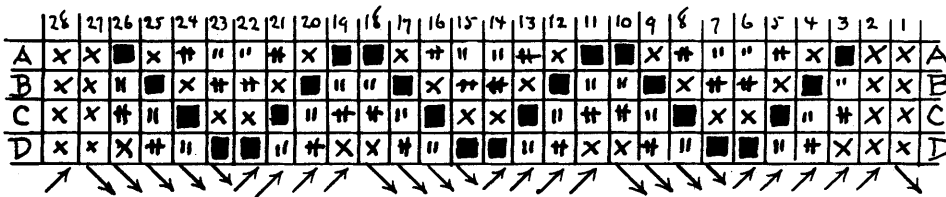
- Warp:
- = Orange, 32 threads
 - Green, 48 "
 - White, 48 "
-
- 128 "

Pattern No. 4



- Warp
- Brown, 26 threads
 - Dark blue, 28 "
 - White, 60 "
 - = Orange, 16 "
 - " Yellow, 6 "
-
- 136 "

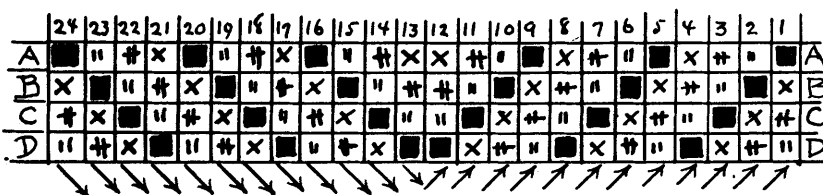
Pattern No. 5



- Warp:
- X Red, 40 threads
 - Black, 24 "
 - Green, 24 "
 - " Yellow, 24 "

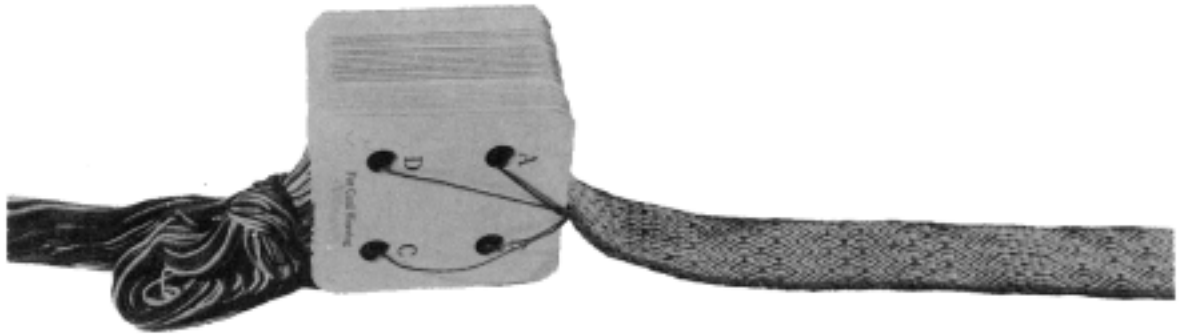
112 "

Pattern No. 6



- Warp
- Black, 24 threads
 - " Yellow, 24 "
 - Green, 24 "
 - X Red, 24 "

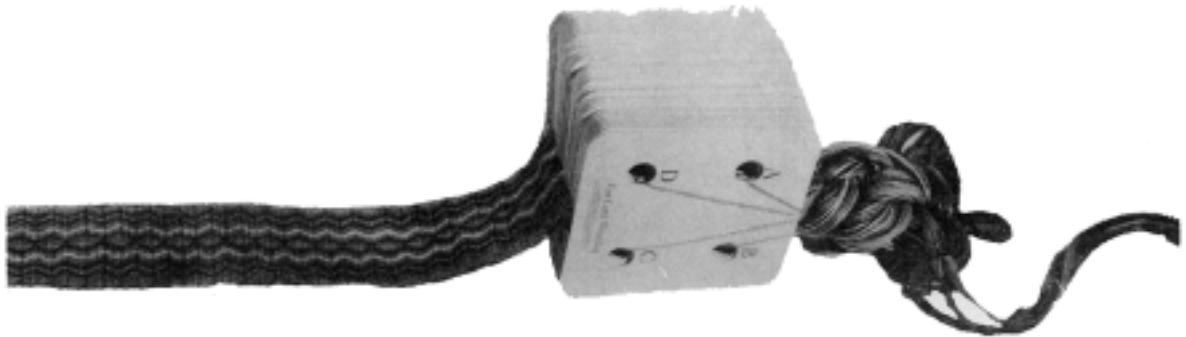
96



Pattern No. 5 is an ancient Egyptian pattern. It lends itself to innumerable variations in weaving as shown by the above piece. It may be made as wide as desired by repeating the eight-card figure.



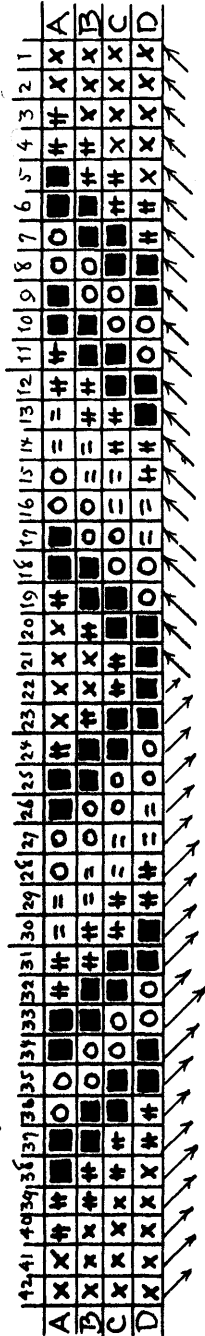
Pattern No. 6 is also an ancient Egyptian pattern woven, probably, four thousand years or more ago. It may also be varied in many ways. The effect shown in the above piece was woven by making twelve quarter turns in each direction.



Pattern No. 7 is known as the "Girdle of Ptahhotep," as it was the pattern shown in a portrait painting of this old Egyptian king. It is particularly gorgeous when carried out in the Egyptian colors as indicated. The red used should be a brilliant red, the yellow a gold or ochre shade, the blue and green strong medium dark shades. This pattern is best when woven in the normal manner without variations.

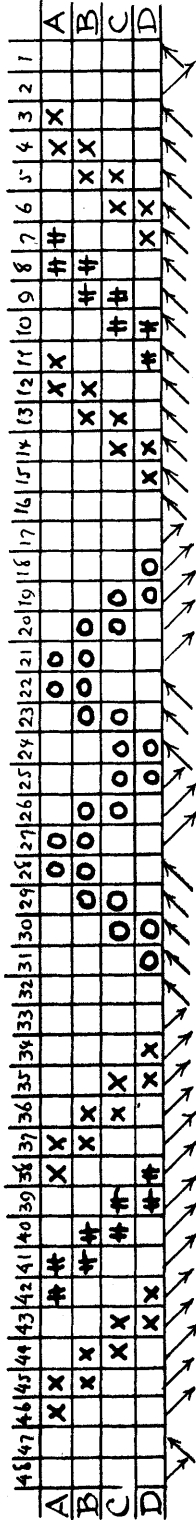
Diagram Three

Pattern No. 7



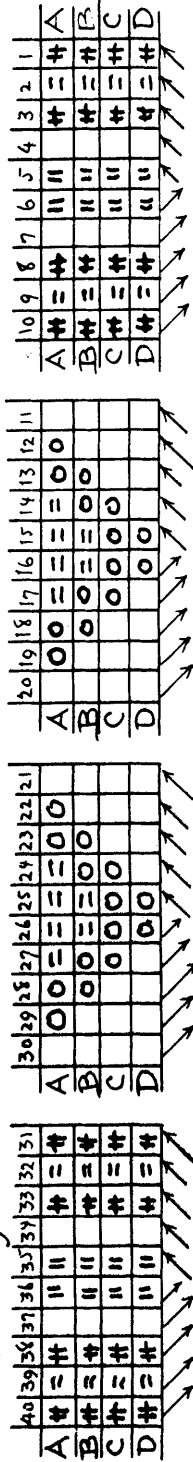
Warp:
 X Red, 34 threads
 # Green, 38 "
 O Black, 48 "
 = Blue, 32 "
 = Yellow, 16 "
 168"

Pattern No. 8

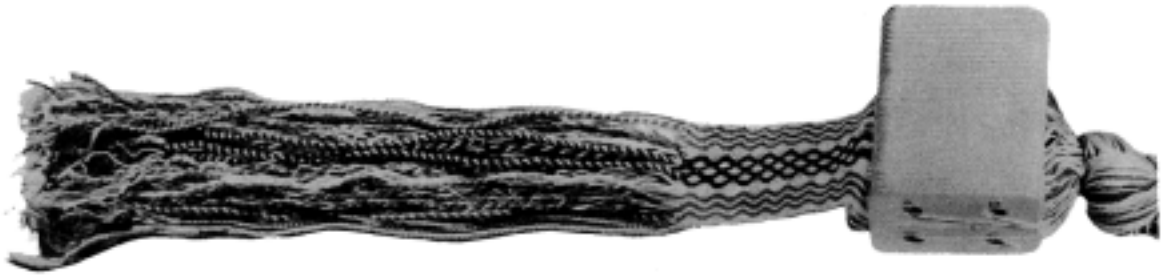


Warp:
 White, 118 threads
 X Red, 32 "
 # Green, 16 "
 O Dark blue, 26 "
 192 "

Pattern No. 9



Warp:
 # Green, 32 threads
 O Blue, 28 "
 = White, 56 "
 || Yellow, 28 "
 || Orange, 16 "
 160



Pattern No. 8 makes a gay girdle for light summer dresses. The pattern was adapted from a piece of native Philippine weaving (not done on the cards.)



Pattern No. 9 makes an interesting braided girdle. The warp consists of four small warps, each of ten cards. Weave the four separately for about $3\frac{1}{2}$ inches. Then weave all together for about four inches; then weave the four separate bands for $3\frac{1}{2}$ inches. Now braid the bands as shown on the above piece, taking each group of ten cards over or under the adjoining group to produce the braid. Fasten the four bands together in the new position with pins or clips, and weave all together for 4 inches. Repeat this process all the way. The unwoven part of the warp will become braided and unmanageable during this process, but if the four small warps have been tied separately at the ends it is a simple matter to take down the warp and unbraided them.

A FEW PRACTICAL SUGGESTIONS

To aid in keeping the width of the band even it is a good practice when weaving a shot of weft to leave a loop at the edge. After turning the cards and pressing back the twist, draw out this loop.

A spreader for a wide piece is useful. A small comb will serve.

When stopping work it is a good idea to make a practice of leaving it always at the end of a figure so that on resuming work the first turns will be in the clock-wise direction. This prevents confusion.

Never permit the work to remain stretched when weaving is not in progress, and never allow the warp to hang slack. When stopping work, push the cards down close to the woven edge and chain up the warp, drawing the first twist of the chain close against the upper edges of the cards, as shown on Diagram One at (9).

THE FINISH OF CARD WOVEN PIECES

A piece of card-weaving should be pressed with a flat-iron, through a damp cloth. Belts may be attached to buckles. When this is done it is a good idea to finish the ends in leather. A handsome finish for a girdle is to allow for long fringes. These should be braided or twisted to make cords, and the belt is fastened about the waist by tying several groups of these cords. Such a fringe is shown on Pattern No. 8, and also Pattern No. 9.

This pamphlet makes no pretense of covering the entire subject of card-weaving. The technique described is the simplest one—the ancient Egyptian technique. The Icelandic double weaving done on the cards is entirely different, as are also the elaborate Arabian techniques. Card-weaving may be done on cards with six and eight holes, and so on.

For books on the subject, the most ambitious is "Le Tissage aux Cartons dans l'Egypte Ancienne" by A. van Gennep and G. Jequier. "Über Brettchen Weberei" by Margarethe Lehman Filhes describes the Arabian and Icelandic techniques. A simple little pamphlet is "Tablet Weaving," by R. Pralle and H. H. Peach.

—MARY M. ATWATER



HAND LOOM and CARD WEAVING YARNS



PEARL COTTON AND FLOSS

Lily Pearl Cotton and Six-Strand Floss, Article 114, are manufactured from home grown Sea Island cottons and are dyed with the highest type dyes obtainable so all colors will be fast to light and washing. Articles woven from these yarns will be of the finest quality material.

See price list for colors, sizes, yardage

LILY MERCERIZED COTTON YARNS

Lily's Mercerized Cotton Yarns, Article 214, are made in sizes from No. 10 to No. 50. Sizes No. 10 and No. 30 are available in 23 fast colors. These yarns are suitable for weaving many different types of materials.

See price list for colors, sizes, yardage



Art. 214



Art. 314

LILY COTTON WARP YARNS

Lily's Cotton Warp yarns, Article 314, are all made from high quality combed yarns, and come in the different sizes and finishes required for the weaving of practically any class material.

See price list for shades, sizes, yardage

TULIP COTTON YARNS

"Tulip" Cotton Yarns, Article 714, are a three strand soft twist yarn of exceptionally high quality and is particularly suitable for the weaving of draperies, upholstery, and materials of this type. The 28 colors are fast to both light and washing.

See price list for colors, sizes, yardage



Art. 714



TULIP CARPET WARP

Tulip Carpet Warp, Article 414, is standard size and construction, and the colors are fast. Packed on half pound tubes. Fifteen colors, plus white and natural.

See price list for colors, yardage

Art. 414



Art. 514

See price list for colors, yardage



Art. 614

See price list for colors, weight



PACKING

8—2 oz. tubes to box



All yarns on page 15 are put up on 1 lb. cones—See price list.