
by Hand
with Eleanor Best
2005

## Lace by Hand

> There are two kinds of weaving related lace
Loom controlled Hand manipulated
This study will focus on the hand manipulated aided by sticks where necessary
It is recommended that a seven yard warp be put on a loom that can produce plain weave
The yarn used may be of any type suitable to the weave but for this study use a yarn about the size of $10 / 2$ linen set at 12 ends per inch and 6 " wide for 72 ends total.

## Lace by Hand

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Inspiration for this study came from Grace McDowell, one of the most knowledgeable weavers of hand manipulated lace weaves.

## Leno Lace

There are many variations of Leno, and some of them are given in this study in the pages to follow. This technique requires the twisting of warp threads to make various designs and effects. The twisting is done by means of a pick-up stick -a smooth, thin stick with rounded or pointed ends.

## General Instructions for Leno

1. Make twists according to directions for the type of leno desired.
2. When all the twists are completed, turn stick on edge and pass shuttle through the shed formed by the twists.
3. Use the stick to press the weft close to the weaving.
4. Withdraw the stick in the same direction as the weft (i.e. if weft were passed from right to left, take stick in left hand and withdraw to left, and vice versa), and use the point of the stick to further press down the weft.
5. Change shed and return with a tabby shot.
6. Repeat as desired or an uneven number of tabby shots may be used between rows of leno.

## Special Instructions

7. Always loosen the tension a little for weaving leno. Tighten after leno shot.
8. Weft should not be drawn tightly. A small loop should be left at the edge, and weft placed loosely in the shed. If the weft is drawn too tightly, the edges of the weaving will be drawn in too much. When work is finished, the lace sections should be just as wide as the tabby sections.

## Antique Mexican Singles

1. Open shed, warp thread at right edge UP. (Change shed if necessary.)
2. With pick up stick, working from right, pick up first lower warp thread, draw upper threads a little to the left with the fingers of left hand, and pass the stick over the first upper warp threads. This makes the first twist.
3. Continue by using the same technique on the next lower and upper warp threads, making a second twist.

4. Continue across warp. Do not skip any threads.

Follow general directions $2-6$ to complete.

## Antique Mexican Doubles

1. Open shed, warp thread at right edge UP. (Change shed if necessary.)
2. With pick up stick, working from right, pick up first two lower warp threads, draw upper threads a little to the left with the fingers of left hand, and pass the stick over the first two upper warp threads. This makes the first twist.
3. Continue by using the same technique on the next two lower and upper warp threads, making a second twist.
4. Continue across warp. Do not skip any threads.

Follow general directions $2-6$ to complete.


## Mexican Singles

1. Open shed, warp thread at right edge UP. (Change shed if necessary.)
2. With pick up stick, working from right, pick up first two lower warp threads, draw upper threads a little to the left with the fingers of left hand, and pass the stick over the first upper warp thread-the first twist.
3. Continue by picking up the next lower thread and twist over the next upper thread.
Note that the first twist starts with 2 over 1, and then continue 1 over 1.
 Follow general directions $2-6$ to complete.

## Mexican Doubles

1. Open shed, warp thread at right edge UP.
2. With pick up stick, working from right, pick up first three lower warp threads, draw upper threads a little to the left with the fingers of left hand, and pass the stick over the first two upper warp threads. This makes the first twist.
3. Continue by picking up the next two lower threads and twist over the next two upper threads.

4. The last twist will be 2 over 3 (or 1 over 2 , according to the number of warp ends available.)
Follow general directions $2-6$ to complete.

## Mixed Antique Mexican

Mix the size of the twists in the row. Examples:
1.5 times $1 / 1 ; 2 / 2 ; 4$ times ( 4 times $1 / 1,2 / 2$ ); 5 times $1 / 1$.
2. 2 times $1 / 1 ;(2 / 2,1 / 1) 11$ times; $1 / 1$

## Leno Dashes

1. Open shed with warp thread at right edge UP.
2. Pass stick under three upper warp threads, then make six $1 / 1$ twists "under six upper warp threads, then six $1 / 1$ twists. Repeat from * and end with under three upper warp threads.
3. Weave 5 rows tabby.
4. Change shed, and reverse the order of instructions above, making twists above plain and plain above twisted sections.
5. Weave 5 rows tabby.


Repeat as desired.
$X X X$
 $X X X$

## Leno Spots

1. Open shed with warp thread at right edge UP.
2. Pass stick under three upper warp threads, then make a single $1 / 1$ twist.
3. Continue across the warp, ending with stick under four upper warp threads.
4. Change shed, and tabby back to right edge.
5. Continue, making the single twists halfway between the twists on the previous row.

6 . Change shed and tabby back.
Repeat as desired.

## Leno Blocks



Weave leno areas in clocks, filling in the tabby space between with Spanish stitch. e.g:

1. Spanish Stitch on first 6 threads (3 upper, 6 lower.)
2. Make six $1 / 1$ twists.
3. Continue 6 twists, and Spanish on 12 threads across warp, ending with Spanish on last 6 threads.
4. Tabby back, filling in return Spanish over previous Spanish section.
5. Reverse the order of above, making twists above Spanish, and Spanish above twisted sections. Keep edges Spanish.
6. Tabby back, filling in Spanish.

Repeat as desired.
For Spanish Stitch, see page 9


Diagram represents Instructions 1 to 5 above.
Note: Diagram shows the actual position of the weft, which makes it look as if the weft is not centered on the twists. When all wefts are pressed into place, both sections of the twist will appear even.

## Honeycomb Leno

This variation makes use of areas of leno alternated with plain areas to produce a honeycomb effect.

## Honeycomb Leno-large

1. Open shed with warp thread at right edge down. Pass shuttle through, beat, and leave shed open.
2. Pass shuttle around edge thread, then through this same shed, beat; pass shuttle around edge thread, and through shed for the third time. This makes 3 shots in the one shed. Do not draw these threads tight-they should be loose enough to form a heavy wavy line between rows of pattern.
3. Change shed and leave open, right edge thread UP.
4. Pass stick under 3 upper warp threads, then make six $1 / 1$ twists (Antique Mexican Singles.) *Stick under 6 upper warp ends, then six $1 / 1$ twists. Repeat from * and end with stick under 3 upper warp ends. Turn stick and weave in this shed.
5. Change shed and tabby back.
6. Repeat Directions 3 and 4.
7. Repeat Directions 1 and 2.
8. Open shed and weave across, making twists above plain sections, and plain sections above twists of previous row. (e.g.-start with 3 twists.)
9. Change shed, tabby back.
10. Repeat Directions in \#8.
11. Repeat Directions 1 and 2.
12. Repeat Directions 3 and 4.
13. Change shed, tabby back.
14. Repeat Directions 3 and 4.
15. Repeat Directions 1 and 2.


## Honeycomb Leno-small

Same as previous sample, but with only one row of leno between heavy lines.

1. Make triple shot as in previous sample, directions 1 and 2.
2. Weave one row of pattern as in previous sample, directions 3 and 4 .
3. Make triple shot.
4. Weave one row of pattern as in previous sample, direction 8.
5. Make triple shot.
6. Weave one row of pattern as at 2 .

7. Make triple shot.

## Honeycomb Leno with Antique Mexican Singles Border

1. Insert heavy linen from right to left-tabby shot.
2. One shot regular linen, tabby.
3. One shot heavy linen, tabby. (Tabby left to right.)
4. Weave one row of Antique Mexican Singles right across warp, regular linen.
5. One shot heavy linen, tabby.
6. Weave one row of pattern as in large Honeycomb sample, directions 3 \& 4 .
7. One shot heavy linen, tabby.

8. Weave one row of pattern as in large Honeycomb sample, direction 8.
9. One shot heavy linen, tabby.
10. Repeat pattern rows as desired, ending with a row of Antique Mexican Singles, one shot regular linen, and one shot heavy linen.

## Alternate Trebles

1. Open shed with warp thread at right edge up.
2. Pass stick between 3 upper and 3 lower warp threads. Pick up next three lower threads and twist over the three upper threads above them.
3. Continue across warp, alternating skips and twists.
4. Weave 3 tabby shots.

5. Reverse order of directions 2 and 3 above, making twists over skip areas and skips over twist areas.
6. Weave 3 tabby shots.

Repeat as desired.

## Ones and Twos

1. Open shed, right edge thread up.
2. Make Antique Mexican twists as follows: 3 single, 3 double, 6 single, 3 double, 6 single, 3 double, 3 single.
3. Tabby back.

## Dogwood Blossoms

Row \#1

1. Shed open, right edge thread up.
2. Pass stick under 6 upper ends.
3. Make 3 single leno twists (warp ends 13, 14, 15, 16, 17, 18.)
4. Pass stick under 8 upper ends.
5. Make 3 single leno twists (ends 35 to 40 .)
6. Pass stick under 8 upper ends.
7. Make 3 single leno twists (ends 57 to 62. )
8. Pass stick under remaining upper ends.
9. Turn stick and weave as for leno.
10. Tabby back.

Row \#2

1. Shed open, right edge thread up.

2. Pass stick under 3 upper ends.
3. Make 3 single leno twists (warp ends 7 to 12.)
4. Pass stick under 3 upper ends.
5. Make 3 single leno twists (ends 19 to 24.)
6. Pass stick under 2 upper ends.
7. Make 3 single leno twists (ends 29 to 34 .)
8. Pass stick under 3 upper ends.
9. Make 3 single leno twists (ends 41-46.)
10. Pass stick under 2 upper ends.
11. Make 3 single leno twists (ends 51-56.)
12. Pass stick under 3 upper ends.
13. Make 3 leno twists (ends 63-68.)
14. Pass stick under 2 upper ends to finish.
15. Turn stick and weave as for leno.
16. Tabby back.

Row \#3
Weave the same as for Row \#1.

## Milwaukee Lace

## Single Border

1. Shed open, and work only on the upper threads.
2. Twist the 2nd upper thread over the first upper thread to make a singles twist, and continue across upper warp. Pass shuttle through twists as for leno.
3. Change shed and tabby back.

## Triple Split Border

1. Shed open, and work only on the upper threads.
2. Weave 2 more tabby shots ( 3 in all.)
3. Change shed and work on upper threads again.
4. Skip first upper thread. Twist 3rd over 2nd. Continue single twists across warp. Pass shuttle through as for leno.
5. Weave 3 tabby shots.
6. Repeat firsts row (as for Single Border.)

## Norwegian Leno

## Border

1. One row same as Antique Mexican Doubles. Tabby back.
2. For second row: Open shed, warp thread at right edge up. With pick up stick, working from right, pick up first two lower warp ends, draw upper threads a little to left with fingers of left hand, and pass stick over the first upper warp thread (2 over 1.) Pick up the next two lower warp ends, draw upper threads a little to left, and pass the stick over the second upper warp thread (2 over1.) Continue by picking up the next lower thread and twist over the next upper thread (1 over 1) across the warp.

Finish by making the last two twists 1 over 2 . Tabby back.
3. Repeat first row (Antique Mexican Doubles.) Single Row
This is made according to directions at \#2 above. Note
 the difference in the effect when this is used alone rather than in combination with Antique Mexican Doubles.
Diagram shows single row only.

## Reverse Diamond Twist

1. Open shed with warp thread at right edge up.
2. Make $2 / 2$ twists (as in Antique Mexican Leno.)
3. Change shed and make twists on this return (instead of weaving tabby back), starting with a $1 / 1$, continuing $2 / 2$, and ending $1 / 1$.
Repeat as desired

## Peruvian Gauze

This is a form of leno done on a closed shed.

## Singles

1. Twist the first thread over the second thread across warp. Complete shot.

2. Change shed and tabby back.

Note: This will look the same as Antique Mexican Singles.

## Doubles

1. Twist the first two threads over the second two threads across warp. Complete shot.
2. Change shed and tabby back.

Note: Because this is done on a closed shed, it will have a somewhat different appearance than Antique Mexican Doubles.

## Doubles Border

1. Twist 2 over 2 across warp. Complete shot.
2. Tabby 3 shots.
3. Twist 1 over 1 , continue 2 over 2 , finish 1 over 1 . Complete shot.

4. Tabby 3 shots.
5. Twist 2 over 2 across warp. Complete shot.
6. Tabby back.

## Singles Border

1. Shuttle at right side to start work.
2. Twist from right to left, 1 over 1 , and pass shuttle from right to left.
3. Twist from right to left, 2 over 1 , continue 1 over 1 , end 1 over 2 , and pass shuttle from left to right.
The warp will now be back to natural position.

## Tarascan Lace

This is an adaptation of Leno which is used by the Tarascan Indians in Southwest Mexico. It was also used in ancient times in Peru and Egypt.

Background is comprised of split $2 / 2$ leno.

1. Open shed with warp thread at right edge up. Twist as for Antique Mexican Doubles (2 over 2.) Complete shot. Change shed \& tabby back.
2. Change shed, make a single $1 / 1$ twist, then $2 / 2$ across, ending with $1 / 1$. Complete shot. Change shed and tabby back.
Pattern is comprised of split $1 / 1$ leno-always an odd number.
At right side of pattern area, where it joins background, make a $2 / 1$ twist.
At left side of pattern, where it joins background, make a $1 / 2$ twist.
This will assure a good join with the background.
Design is geometric, with vertical lines always on the oblique.
Designs are written out using x for $2 / 2$ twists, I for $1 / 1$; (for $1 / 2$;) for $2 / 1$. (Some designers use O for both joining twists-whether right or left is evident on design.)
Weaving may make lace from edge to edge of the piece, or a tabby border on the edges may be procured by weaving the edges with Spanish Stitch.
3. Weave $2 / 2$ twists across. Tabby back.
4. Weave $1 / 1$ once, $2 / 2$ across, end with 1/1. Tabby back.
5. Weave $2 / 2$ twists across. Tabby back.
6. Weave $1 / 1,2 / 2-5$ times , $2 / 1,1 / 1-11$ times, 1/2, 2/2-5 times , 1/1. Tabby
 back.
7. Weave $2 / 2-5$ times, $2 / 1,1 / 1-13$ times , $1 / 2,1 / 1-5$ times $2 / 2$. Tabby back.
8. Weave $1 / 1,2 / 2-4$ times, $2 / 1,1 / 1-5$ times, $1 / 2,2 / 2,2 / 1,1 / 1-5$ times, $2 / 1,1 / 2,2 / 2-4$ times, $1 / 1$. Tabby back.
9. Weave $2 / 2 — 4$ times, $2 / 1,1 / 1-5$ times, $1 / 2,2 / 2 —$ twice, $2 / 1,1 / 1-5$ times, $1 / 2,2 / 2-4$ times. Tabby back.
The weaving directions above are for the first 7 rows of pattern. To complete, weave rows $6,5,4,2,1$.
Be very careful not to draw in weft threads. In this weave it is very easy to draw in the edges to a very great extent, spoiling the design.

## Tarascan Lace with Tabby Border

1. Tabby, 10 shots for beginning border-end at right.
2. Spanish Stitch on 12 edge threads ( 6 upper, 6 lower.)
3. Weave $2 / 2$ twists, 12 times.
$\times \times \times \times \times \times \times \times \times \times \times$ IXXXXXXXXXXXI XXXX( IXXX (IIIIII) X X X XXX (IIIIIIII) $\mathrm{X} \times \mathrm{X}$ $1 \times \times(1) \times X \times(1) \times \times 1$
XXX (IIIIIIII) $X \times X$
IXXX (IIIIII) X X X
$\mathrm{X} \times \times \times(11111) \times \times \times \mathrm{x}$
X X X X X X X X X X X
4. Spanish Stitch on left edge threads.
5. Tabby back with Spanish at edges to fill in.
6. Spanish at edge, $1 / 1,2 / 2-11$ times, $1 / 1$, Spanish at edge.
7. Same as \#5.
8. Spanish at edge. $2 / 2-4$ times, $2 / 1,1 / 1-5$ times, $1 / 2,2 / 2-4$ times. Spanish at edge.
9. Same as \#5.
10. Spanish at edge. $1 / 1,2 / 2-3$ times, $2 / 1,1 / 1-7$ times, $1 / 2,2 / 2-3$ times, Spanish at edge.
11. Same as \#5.
12. Spanish at edge. $2 / 2-3$ times, $2 / 1,1 / 1-9$ times, $1 / 2,2 / 2-3$ times, Spanish at edge.
13. Same as \#5.

14 Spanish at edge. $1 / 1,2 / 2$-twice, $2 / 1,1 / 1,1 / 2,2 / 2-3$ times, $2 / 1,1 / 1,1 / 2,2 / 2-$ twice, $1 / 1$. Spanish at edge. The directions above bring you to the center row. Reverse directions from \#13 to complete.
For Spanish Stitch, see below.

## Spanish Lace

The Spanish Stitch consists of 3 short wefts covering a designated area, with the weft forming either a " $z$ " or an "s", depending on whether you are working from the right or left.
Groups of these together appear like this:
When this stitch is left loose in the warp, providing a lacy effect, it is called Spanish Lace. When the stitch is drawn tight and beaten down, it is called Spanish Eyelet.
The size of the Spanish area may be adjusted to suit the needs or desires of the weaver.

## General Directions

1. With shuttle at right side, open shed with first warp end up.
2. Pass shuttle under 6 upper threads and bring to surface.
3. Change shed, and catching warp end to the immediate left of where the shuttle came out of previous shed, pass shuttle from left to right under 6 warp ends. (This should bring shuttle to right edge again.)
4. Change shed, and pass shuttle under 12 upper warp ends and bring to surface. (This will bring shuttle out 6 warp ends beyond the first unit of the stitch.
5. Continue, working from left to right under 6 upper warp ends, and then working right to left under 12 upper warp ends in the above manner, across the warp.
6. At the end, finish by passing shuttle under the 6 upper warp ends which are left.

Note \#1-This stitch can be worked from left to right in the same manner as above, just changing the direction of right and left in the instructions.
Note \#2-These directions may be adjusted to fit any specified number of ends desired.

## Single Spanish Lace

Woven according to General Directions above.


Double Spanish Lace
Woven according to
General Directions
on page 9, plusNote\#1.


## Diagonal Split Spanish Lace

Row \#1-Woven according to General Directions. Right to left.
Row \#2-Left to right. Begin and end on a " 3 " group instead of a " 6 ", in order to make the second row of units begin and end mid-way between the units on the first row.
These 2 rows may be
 continued for further rows of units.

## Patterned Spanish Lace

Through the use of mixed sizes of Spanish Stitch, an interesting pattern effect may be produced.
Row \#1—Right to left. Shuttle under 3 warp endscontinue stitch; shuttle under 6 warp ends-continue stitch;
 continue across, alternating the " 3 " stitch and the " 6 " stitch. (3 636363 6)
Row \#2-Left to right. Same as row 1, but from left to right instead of right to left. This will stagger the stitches.
Row \#3-Right to left. Shuttle under 3 warp ends-continue stitch; *shuttle under 3 warp ends, continue stitch; shuttle under 6 warp ends, continue stitch*. Repeat from * to * twice more; end with two " 3 " groups. (3 3636363 3)
Row \#4-Left to right. Shuttle under 6 warp ends-continue stitch; shuttle under 3 warp ends, continue stitch; Continue across, alternating the " 6 " and " 3 ". (6 36366 3)

## Spanish Eyelet

In this weave, the same general directions for Spanish apply as for Spanish Lace, except that while the Lace is left "open" or "lacy", the Eyelet is drawn tight and beaten down so that the stitch is close together, with an "eyelet" between the stitches.

General Directions are the same as for Spanish Lace.

Single Spanish Eyelet-Same stitch sequence as for Single Spanish Lace.
Double Spanish Eyelet-Same stitch sequence as for Double Spanish Lace.
Diagonal Split Eyelet-Same stitch sequence as for Diagonal Split Lace.
Patterned Spanish Eyelet-Same stitch sequence as for Patterned Spanish Lace.

## Single Spanish Eyelet Repeats

Row \#1—Right to left. Weave
as per General Directions for Spanish Lace.
Row \#2-Left to right. Tabby
 Repeat these rows as desired.

## Double Spanish Eyelet Repeats

Row \#1—Right to left. Weave as per General Directions for Spanish Lace.


Row \#2—Left to right. Reverse
General Directions for Spanish Lace to make this left to right stitch.
Repeat these rows as desired.

## Danish Medallion

This is a decorative technique which may be used in several different ways. Used on the edge of fringed mats, it eliminates overcasting or hemstitching the edges. It may be used as a border design, or other decorative motifs may be applied by use of this technique. Different colors, and weights of threads produce various results. When used in combination with Leno, or Brooks Bouquet, still further variations appear.

## Border Design—brown and natural linen

1. Insert 8 cord linen from left side, leave at right side. Do not catch end of thread into work, but leave hanging at left edge.
2. Weave 4 shots colored, fasten off.

| 0 1) |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| 000 |  |  |  |  |
|  |  |  |  |  |
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| 0 | 0 | 0 | 1 | 0 |
| $1)$ | 1 | $1)$ | 1 | ) |

3. Change shed and hold open with stick. With 8 cord, bring shuttle from right, under 6 upper warp ends and bring to surface.
4. At the point between the 12th and 13th warp ends (counting with shed closed), make Danish stitch as follows:
a) Draw loop of thread down through warp at this point.
b) Insert crochet hook through warp at same point, but before the first 8 cord shot.
c) Catch loop with hook and draw up to surface.
d) Put shuttle through loop and draw up the stitch away from you.
5. Continue across, making a Danish Stitch after every 12th warp end (6 upper and 6 lower.)
6. At end of row, insert the hanging end of 8 cord into the shed.

This rounds the end of the row to match the beginning.
7. Tabby 6 shots with $20 / 3$ linen.
8. Row of Danish Medallion same as instructions 1 to 6.
9. Tabby 4 shots with $20 / 3$ linen.
10. Row of Danish Medallion same as instructions 1 to 6 . This makes five Danish Stitches in the row.
11. Then make a row with stitches midway between previous row, starting farther in from edge-making 4 stitches.
12. Make a row with stitches midway between stitches of previous row-making 3 stitches.
13. Last row, midway again, with only 2 stitches.

## All-over Design in Danish

This type of design may be enlarged greatly to decorate larger pieces.
Row \#1-Danish as for edge of brown sample above, but using all natural weft.


Row \#2—Danish Stitch directly over Row 1, but omit center stitch.
Row \#3-Danish Stitch at beginning and end only-omit center 3.
Row \#4-Same as Row \#3
Row \#5-Same as Row \#2
Row \#6-Same as Row \#1
To end piece, thread end of linen in darning needle and darn it into the beginning of the rows being drawn into the stitch.

## Danish Medallion with Antique Mexican Singles

1. Danish Row-1 shot 20/3 linen, left to right; 4 shots novelty yarn; 20/3 linen right to left, Danish Stitch, passing shuttle under 4 upper warp ends for each stitch.
2. Antique Mexican Singles-20/3 linen, shuttle left to right.
3. Same as first row, but worked with shuttle going from left to right.


## Danish Medallion with Antique Mexican Doubles

1. Antique Mexican Doubles, right to left, 20/3 linen.
2. Danish Row-1 shot 20/3 linen, left to right, 6 shots novelty yarn, 20/3 linen right to left, Danish Stitch, after every 3rd Leno.
Do not draw tightly-leave a long vertical stitch.

3. Antique Mexican Doubles, as at first.

## Danish Medallion with Brooks Bouquet

1. Row of Danish Medallion, same as in sample "Danish Medallion with Antique Mexican Singles", instruction \#1.
2. Row of Brooks Bouquet, making Bouquets on 4 upper warp ends.

Do not draw tightly. (See page... for Brooks Bouquet.)
3. Danish Medallion, same as first row.
4. Repeat row of Brooks Bouquet.

5. Danish Medallion, same as first row.

This may be continued as desired.

## Initials and Figures

These may be worked from any "cross-stitch_ pattern, with the " $x$ " on the pattern graph used as a small "block" between two Danish Stitches.
Note that where 2 or more symbols come together in a horizontal line, 1 Danish Stitch is used between them.

Example: for the letter "A" in the following chart: "x's" are added to this example to show the position of the diagram design.


## Deily Medallion



This technique, an adaptation of Danish Medallion, is worked in much the same way, except that the stitch is worked at angles $/ \backslash / \backslash / \backslash$ rather than vertically ||| as in Danish.

## Single Deily Medallion—natural

1. Weave 1 shot with 20/3 linen, left to right; 4 shots with novelty yarn.
2. Open shed. With 20/3 linen, pass shuttle under 6 upper warp ends, bring to surface.
3. Draw loop of $20 / 3$ down between warps 12 and 13 .
4. Insert crochet hook through web, before first $20 / 3$ shot, and between warps 6 and 7 .
5. Catch loop with hook, and draw through. Put shuttle through loop, and draw stitch up to point between warps 12 and 13.
6. From the same position, make another stitch, this time putting crochet hook between warps 18 and 19 , and drawing up to same point.
7. Pass shuttle through under another 6 upper warps and make 2 stitches from this position-the first going back to the point between wars $18 \& 19$, and the second going forward to the point between warps 30 and 31 .
8. Continue across weaving in this manner. $\backslash / \backslash / \backslash / \backslash / \backslash /$

## Single Deily Medallion-colored

Same as above border, but uses brown linen instead of the 20/3.

This combines with Antique Mexican Singles to make an attractive border.


1. Same as for Single, colored, border above.
2. Row of Antique Mexican Singles-use novelty yarn.
3. Same as for first row, but with direction of stitches reversed.

## Deily Medallion "Floweret" Border

1. One shot brown linen left to right, leave at right.
2. Six shots novelty.

3. With brown, pass shuttle through to point between warps 18 and 19. From this point make Deily stitch to right, then Danish directly below, then Deily to left.
4. Continue shuttle through to point between warps 36 and 37. Repeat stitches.
5. Continue shuttle through to point between warps 54 and 55. Repeat stitches.
6. Carry shuttle to edge. Tabby back with brown.
7. Six shots novelty.
8. Brown shuttle, make Deily and Danish stitches to reverse previous row of pattern. (See diagram)

## Brooks Bouquet

This technique, which produces little "bouquets" or knots on the right side of the fabric, and warp floats on the other side, comes to us from Marguerite G. Brooks.
The number of warp ends used in the bouquet will vary, according to the material being used, the desired effect, and the taste of the weaver.
The general instructions for weaving this technique remain the same, no matter the number of warp ends to be used for the bouquet-just change the number of ends in the directions. The general instructions to follow are for bouquets made on 4 upper warp ends. Other samples suggested in these notes are only 3 warp ends, so the instructions must be changed accordingly.

## General Instructions

1. Open shed, and keep open.
2. Working from right, pass shuttle under 4 upper warp ends, back over 4 upper warp ends, then under 8 upper warp ends. Pull to form a little knot around first 4 ends. This is one bouquet.
3. Carry shuttle back over 4 , and forward under 8 across the warp, going forward only 4 at left
 edge.

## "Four's Bouquet—Lacy

1. Spanish Stitch at edge (8 ends.) Then make 7 Bouquets of " 4 's". Spanish at end.
2. Spanish at edge, tabby across, Spanish at end.
3. Tabby, 6 shots.
4. Repeat 1 and 2, to make double border. Do not beat bouquets down to web.

## "Split Four's Bouquet—Lacy

1. Spanish at edge ( 8 ends.) 7 Bouquets of " 4 's". Spanish at end ( 8 ends.)
2. Spanish at edge, tabby across, Spanish at end.
3. Spanish at edge ( 12 ends.) 6 Bouquets of " 4 's", Spanish at end ( 12 ends.)
4. Spanish at edge, tabby across, Spanish at end.
5. Repeat as desired, ending with row \#1.

## Brooks Bouquet Spots

The Bouquets on this sample are beaten down to the web, so no Spanish fill-in is necessary.

1. Open shed and hold open. Pass shuttle under 8 warp ends. Bring to surface.
2. Carry shuttle back over 4 ends, then pass through under 12 ends. Surface.
3. Same as \#2.
4. Same as \#2.
5. Carry shuttle back over 4 ends, pass through 8 ends. Beat close to web.
6. Tabby 5 shots. Shuttle now at right edge.
7. Open shed and hold open. Pass shuttle under 12 warp ends. Surface.
8. Carry shuttle back over 4 ends, pass through under 12 ends, repeat across web. Beat close to web. Shuttle now at left.
9. 5 shots tabby.
10. Repeat 1, 2, 3, 4, 5 .

## "Three's" Bouquets-single and double borders

1. Shed open. From right edge, pass shuttle under 6 upper warp ends. Surface.
2. Carry shuttle back over 3 warp ends, pass through shed under 6 ends. Surface.
3. Continue across until 10 Bouquets are made. Beat to web.

The above makes a single border.
For the Double border, weave 5 tabby, and then repeat Bouquets.

## Split "Three's" Bouquets

1. Row same as previous sample. Beat to web.
2. Four tabby shots. Shuttle now at left edge.
3. Open shed and work from left. Pass shuttle under 8 warp ends. Surface.
4. Carry shuttle back over 3 warp ends, then pass through shed under 6 ends until 9 Bouquets have been made, then carry shuttle through to right edge.
5. Four tabby shots.
6. Repeat row \#1.

## Border Design

1. Row same as for "Three's" Bouquets above. Beat to web. Do not draw tight.
2. Tabby back.
3. Make Bouquets over 1st, 4th, 7th and 10th Bouquets in first row.
4. Tabby Back. Weave rows 3 and 4 twice more.
5. Repeat row \#1.


## Border, or All-Over Texture

Weave Split "Three's" (see above) without any tabby between pattern shots.

## Split "Four's" Bouquet Border

1. Make row of 4's Bouquets. Do not draw tight. Best to approximately 114 " from web.
2. Tabby back. Beat as in row \#1.
3. Split the 4's by making 2's Bouquets at each end. Beat as in row \#1.
4. Tabby back. Beat as in row \#1.

Repeat as desired

## Corner Design

1. Make 4 " 4 's" Bouquets, starting approximately 1 inch from edge of web. Do not draw tight. Beat down to web.
2. Tabby, 3 shots.
3. Make 3 Bouquets over first three of above row.
4. Tabby, 3 shots.
5. Make 2 Bouquets over first two of above row.
6. Tabby, 3 shots.
7. Make 1 Bouquet over first of above row.

## Block with Danish

1. Open shed. From right edge, pass shuttle under 8 ends, carry back over 4 to make Bouquet, continue on to make a total of 3 Bouquets. Tabby to edge.
2. Tabby, 3 shots.
3. Open shed, carry shuttle under 4 upper warp ends, and make a Danish Stitch at this point, down into space at beginning of Bouquet below.

4. Make Bouquet on next 4 upper warp ends.
5. Do two Danish Stitches-one on each side of the floating warp end between bouquets.
6. Repeat 4, 5, 4.
7. Do one Danish Stitch at end of block. Carry shuttle through tabby to edge.

## Finnish Lace

This is a very decorative lace weave which consists of tabby pattern areas on a background of $2 / 2$ leno.
Pattern Diagram is made on squared paper. Blank squares represent solid pattern areas (tabby.) X represents $4 / 4$ twists. Background area, marked by dots, is $2 / 2$ twists.
The shuttle carries the thread which makes the twists and also weaves a binding thread. Background twists are made on a closed shed, working from right to left with shuttle thread. Shuttle is returned to right on a binding shed-tabby in tabby areas and reversing the twists in
 background areas. The pattern is laid in with butterflies of thread-one for each section of the pattern. The pattern is built up of tabby shotstwo shots between the shuttle shots.
e.g: ----= butterflies $\quad \cdots \cdot \cdot=$ shuttle shots.

After a right to left shuttle shot (on which twists are made in background areas), make 2 tabby shots
with butterflies, then drop butterflies through warp to hang underneath and bring to top after next shuttle shot.
After a left to right shuttle shot, make 2 tabby shots with butterfly threads, then place butterflies on top of web until needed again.
When pattern Areas are increased or decreased, the butterfly threads are carried to new position in same shed as the left to right shuttle shot.

## "Block" Border Design

1. Make a row of $2 / 2$ twists on a closed shed-18 twists.
2. Seven shots tabby.
3. Prepare 3 butterflies.
4. Insert butterflies at right and left edges, weaving 2 shots over 4 edge twist units (fasten in ends on 2nd shot.) Leave butterflies on top of web.
5. Shuttle show, right to left-tabby over area of first 4 units (same as butterflies), ten $2 / 2$ twists on closed shed; tabby to edge.
6. Butterflies-2 shots in edge area-drop through web.
7. Shuttle shot, left to right-tabby at edge; reverse 2 twists; tabby over next 6 twists; reverse 2 twists; tabby to right edge.
8. Butterflies-bring to surface. Continue edge butterflies and add 3rd butterfly over center 6 twists; leave butterflies on top of web.

9. Shuttle shot, right to left-tabby at edge; two $2 / 2$ twists; tabby over center pattern area; two $2 / 2$ twists; tabby to left edge.
10. Butterflies-continue edges and center; drop through web.
11. Shuttle shot, left to right-same as \#7.
12. Butterflies-same as \#10.
13. Shuttle shot, right to left—tabby at edges, two $2 / 2$ twists; tabby for 2 units; $4 / 4$ twist; tabby for 2 units; two $2 / 2$ twists; tabby to left edge.
14. Butterflies-same as \#10.
15. Shuttle shot left to right-same as \#7.
16. Butterflies-same as \#8.
17. Shuttle shot, right to left-same as \#9.
18. Butterflies-same as \#10, but end off center butterfly after shots.
19. Shuttle shot, left to right-same as \#7.
20. Butterflies at edge-2 shots.
21. Shuttle shot, right to left-same as \#5.
22. Butterflies at edge -2 shots and fasten off.
23. Tabby, 7 shots.
24. Same as \#1.

## Finnish "Openwork" Design

1. Shuttle shot, right to left-2/2 leno on closed shed.
2. Return shuttle shot-use pick up stick from right-over 2 , under 2 , 8 times; over 1, under 1, 4 times; over 2, under 2, 8 times. Return

shuttle left to right.
3. Insert butterfly thread in 2 center units. Weave 2 shots, leave on top.
4. Shuttle shot, right to left-5 times $2 / 2 ; 2 / 2$ doubled once (making 4/4); 2/2; "tabby area; reverse from *.
5. Butterfly-2 shots in same area.
6. Open tabby shed, carry butterfly 1 unit to left, drop through warp.
7. Return shuttle left to right, reversing the twists and weaving tabby in pattern areas.
8. Bring butterfly to surface and weave 2 shots over 4 units. Leave on top.
9. Shuttle shot, right to left—four times $2 / 2$ twists; $4 / 4,2 / 2$, tabby over pattern area, $2 / 2,4 / 4$; four times 2/2.
10. Butterfly-2 tabby shots in pattern area.
11. Open tabby shed, carry butterfly 1 unit to left, drop through warp.
12. Shuttle shot left to right—reverse twists—tabby in pattern areas.

Continue, following pattern on page 17—making increase or decrease in tabby shed at time of making a left to right shuttle shot.

## "Flower" Design

For convenience, this was worked upside down.

1. Tabby, 6 shots, ending at right.
2. Insert natural butterflies at edges (left to right) - the 8 warp ends at each side will be woven tabby throughout the pattern section.
3. Shuttle shot, right to left-fourteen $2 / 2$ twists in center with tabby at edges.
4. Butterflies-2 shots at edges.
5. Shuttle shot, left to right-tabby in tabby sections, reverse twists in twist sections.
6. Insert pink butterfly to begin flower over the middle two twists of previous row. Make 2 butterfly shots.
7. Continue with 2 butterfly tabby shots on edges between shuttle shots on edges between shuttle shots throughout piece. This will be understood from now on, and not included in the directions.
8. Shuttle shot, right to left-tabby at edges, six $2 / 2$ twists; tabby throughout pattern area; six $2 / 2$ twists; tabby at edge.
9. Pink butterfly-make 2 tabby shots in same area as previous shots.
10. Shuttle shot, left to right. Open shed, carry pink thread to point 4 ends (1 unit) away from pattern area just completed, and drop
 through warp. With shuttle, tabby in tabby areas, reverse twists over twists.
11. Bring pink thread to surface and weave 2 shots over space represented by 4 of the original twists.

Continue in this way, following the pattern diagram above, making a $4 / 4$ twist in the center of the flower and a $4 / 4$ twist where indicated near the bottom of the "leaf" section. Leaf section is woven with green linen.
For some very excellent designs in "Finnish Lace" see Pitsia Kangaspuissa, by Matilda Wahe

The text is in Finnish, but there are 130 working diagrams, plus photographs of each design.

## One Shuttle Lace

This is a one-shuttle modification of Finnish Lace.
Additional Equipment-1 narrow, and 1 wide flat stick, tapered points.

Pattern—Draw diagram on squared paper, 4 warp ends and 4 weft shots per square. Filled-in squares represent tabby areas. Each open square represents a $2 / 2$ leno.

## Weaving:

Weave tabby for hem or border, ending with a shot in the shed which has the right edge thread down.
The pattern requires a repeat of 4 general steps, weaving 4 shots:

## Weft Shot \#1

1. Count off edge threads for tabby borders, if any.
2. Open shed with right edge thread up.
3. In leno pattern area only, insert narrow stick and make $2 / 2$ leno. This stick will be on top of all plain pattern areas.
4. Bring stick close to weaving to check on accuracy of twists.
5. Push stick back towards reed, 2 inches or so.
6. Open shed with right edge thread up-this will open only tabby areas.
7. Insert wide stick in tabby sheds, and also in the leno sheds held by the narrow stick.
8. Push narrow stick to reed.
9. Draw wide stick down firmly to weaving to help press in the previous shot.
10. Turn wide stick on edge.
11. Pass shuttle thorough shed thus formed, and press weft into place.
12. Remove wide stick only.

## Weft Shot \#2

1. Draw narrow stick forward.
2. Open shed with right edge thread down.
3. Insert wide stick in tabby and leno sheds.
4. Push narrow stick back to reed.
5. Draw wide stick down firmly to fell, to press in previous shot of weft.
6. Turn wide stick on edge, pass shuttle through shed thus formed.
7. Remove both sticks, and beat.

## Weft Shot \#3

1. Open shed, right edge thread down.
2. With narrow stick, pick up the upper threads of the leno twist areas only.
3. Place stick 2 " or so back from fell.
4. Open shed, right edge thread up.
5. Insert wide stick in tabby and leno sheds.
6. Push narrow stick back to reed.
7. Draw wide stick down firmly to fell, to press in previous shot of weft.
8. Turn wide stick on edge, pass shuttle through shed thus formed.
9. Press weft into place.
10. Remove both sticks and beat.

## Weft Shot \#4

1. Open shed, right edge thread down.
2. Pass shuttle through shed, and beat.

Continue weaving by repeating these 4 rows, following the pattern diagram.

## Greek Lace

This is a technique for which the weaving is done with wefts of two different

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The general background consists of leno twists, and these and the actual design are woven with coarse thread. In between the rows where the coarse thread is used, you weave shots of tabby (always an odd number) with a fine thread. For the purpose of our study we will use 3 shots of fine weft. For other effects you may wish to use more, but it must always be an odd number.
The design is laid in over the areas shown on your prepared pattern in the same manner as Spanish Stitch, except that the Greek has more "turns." For instance, Spanish would show 3 rows of weft, but Greek would show 5 or 7 , according to the type of work being done and the size of thread being used.
The pattern is prepared on squared papereach blank square represents a leno twist-each filled square represents a "filled-in" (Greek) stitch. For our sample we will select a simple leaf pattern. Leno twists will be 3/3.

## Weaving Directions

1. Weave heading with regular weft.
2. Insert heavy weft, weave 2 shots tabby.
3. Insert light weft, weave 3 shots tabby.
4. With heavy weftopen shed (right edge thread up) and make 12 3/3 twists.

5. With light weft—weave 3 shots tabby.
6. Heavy weft-make $3 / 3$ twists in areas represented by blank squares on your pattern, and 5 -thread fill-in (Greek Stitch) in areas represented by filled squares on pattern. To do this, you will have to make twists, bring out shuttle and weave tabby areas for the Greek stitch, make more twists, etc., across the pattern row. For example: The first row of actual pattern (reading from bottom up) shows 3 twists at left edge, a 5 shot Greek over next 2 twists on previous row, then 3 twists, then another 5 shot Greek over next 2 twists in the previous row, and 2 twists at right edge.
7. Light weft-weave 3 shots tabby.
8. Heavy weft-next row of pattern-note that the Greek stitch extends over areas of 3 units.
9. Continue, alternating the 3 shots of tabby with light weft, and the pattern row with heavy weft.

The working diagram to the right, shows the path of the heavy thread with its use in the making of the fill-in Greek stitches, the path of the fine thread, and the position of the $3 / 3$ leno twists.

Note \#1: On the diagram, $\cdots$... = light weft; $--=$ heavy weft; $\mathrm{X}=3 / 3$ twists.
Note \#2: This technique has a tendency to elongate the pattern in the warp direction, so it is advisable to make samples, using various threads, to gain the desired effect.

Note \#3: In our sample, we have taken the twists from edge to edge in order to have sufficient units upon which to design. In making a full sized piece of work, it would be better to plan the edges to be filled in solid with Greek stitch, thus making a selvedge. When this is done, it is possible to finish off the weft after each time it is used, and always start the pattern weft from the right, making the stitches in one direction.

In our sample, because we took the twists right to the edge, it was difficult to fasten them off neatly, so we just alternated the direction of the heavy warp.

Of course, even with the Greek stitch built-up edges, you may also just carry the heavy weft up the sides, and alternate the direction of the heavy weft as we have done in the above sample.

