

<http://www.cs.arizona.edu/patterns/weaving/>

## Contents

Masthead Graphic .....	1
Illness .....	1
New Member of the Team .....	1
Recent Additions .....	1
Exploring the Website, Part 9: Manuscripts .....	2
Cellular Automata, Part 1 .....	3
Bobbin Lace .....	4
Girl Guides' Lacemaker Badge .....	6
Lace News and Notes .....	6
Double Weave Sampler .....	7
CD List .....	8

## Masthead Graphic

The masthead graphic shows a series of fancy twills produced by a cellular automaton working on an fancy twill. See the article on page 3.

## Illness

I have been seriously ill and have spent most of the fall in hospitals and rehabilitation.

As a result, I'm behind on all of my projects on weaving and lace. The delay in the publication of this issue of *Webside* is an example.

I presently am trying to catch up and get things on an even keel.

In addition to the interruption caused by my illness, my work capacity is diminished. So I need to make some compromises.

I will be relying more on my colleagues, Tess Parrish and Margaret Coe for new content for the archives.

Another compromise involves one of my favorite projects, *Posselt's Textile Journal*. Instead of trying to create digital facsimiles for complete issues, I will only do articles related to weaving.

In addition, *Webside* may be published less frequently and on an irregular schedule.

— reg

## New Member of the Team

I am very pleased to have the assistance of John Cropper, a member of the Laboratory Staff of the Department of Computer Science and a dear friend.

John is volunteering his time to help with scanning and technical matters.

## Recent Additions

[2005-09.html](#), [2005-10.html](#), and [2005-11.html](#)

Additions to the website for the last few months are diverse. Notable are:

- "Dictionary of Weaves" and other articles on weaving from *Posselt's Textile Journal*.
- Books on various aspects of weaving, drawn thread work, Italian cut work and filet lace, and net work.
- More issues of the *Minnesota Weaver*.

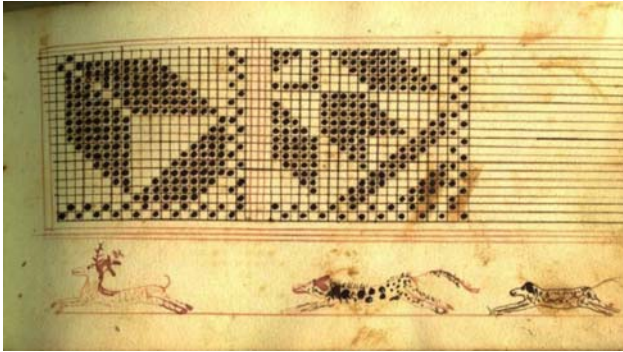
## Acknowledgments

- Karen Searle
- Elaine O'Donal

## Exploring the Website, Part 9: Manuscripts

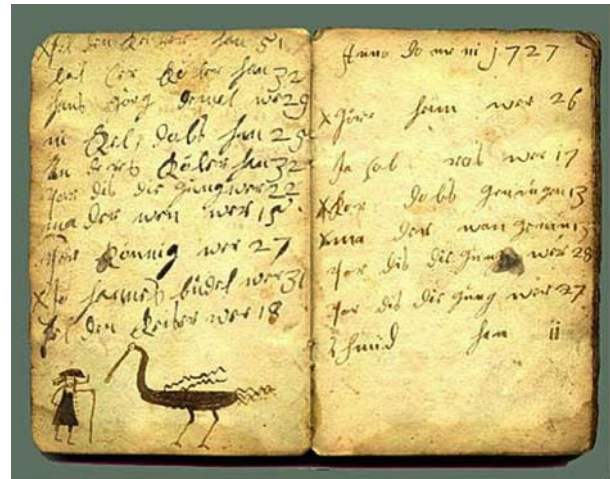
In the context of the website, a manuscript is an unpublished work, such as an old weaver's pattern book.

Most such manuscripts, unlike literary manuscripts, were never intended to be published, but that doesn't matter for intellectual property purposes.



Old unpublished manuscripts are protected until 70 years after the death of the author; hence manuscripts of interest here have long passed into the public domain with one exception: If they were published prior to January 1, 2003, they are protected by copyright.

The website has only a few manuscripts (see the screen snap of [manuscripts.html](#) below). Those that are on the website are there by permission or

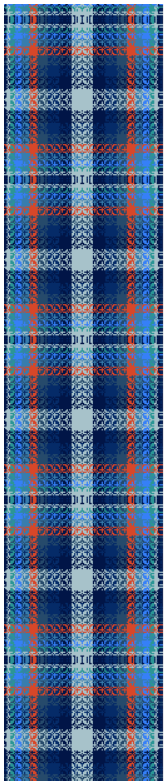


because the originals have been lost.

While digital facsimiles of many other manuscripts are available, persons and institutions that own manuscripts often are fiercely protective of them: They are rare and command high prices. Although they are in the public domain, it is only prudent not to publish digital facsimiles on the website without the owners' permission. (Note: like a rare old book, possession of a manuscript does not give intellectual property rights.)

This is the matter of most tension with regards to contents of the website — making public-domain material available to the public versus contention and possible litigation, however spurious.

Someday, perhaps.



---. [border patterns for towels?], 1690, 26 pages. Posted March 19, 2001. [CD \(CWDA02\)](#). [SAMPLE PAGE](#). File size 1.3 MB [PDF](#)

**Bargmann, Ute.** *Block Drafts from Heinrich Leisy's Pattern Book*, 2000, 236 pages. **Note:** Computer drafts. Posted November 27, 2001. [CD \(CWDA02\)](#). [SAMPLE PAGE](#). **Part 1:** File size 6.1 MB [PDF](#). **Part 2:** File size 6.4 MB [PDF](#).

**Galvin, Nellie L.** *A German Weaver's Pattern Book: 1784 - 1810*, 1961, 119 pages. **Note:** Published without a copyright notice. Landscape mode. Some scanned images provided by Kris Bruland. WIFs of the patterns in this document are available at [www.handweaving.net](http://www.handweaving.net). Posted May 26, 2004. [CD \(HWDA08\)](#). [SAMPLE PAGE](#). File size 9.8 MB [PDF](#)

**Hunsberger, Samuel.** [pattern book], 52 pages. **Note:** Reduced to 81.5% when printing. Posted September 7, 2000. [SAMPLE PAGE](#). File size 4.1 MB [PDF](#)

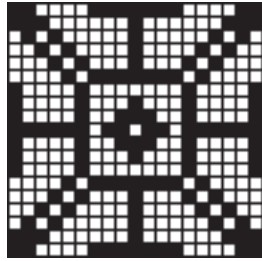
**Kiel, Wilhelm.** [Pattern Book], 1840, 33 pages. **Note:** PDF provided by Anton Oesterle. Landscape mode. Posted February 18, 2005. [SAMPLE PAGE](#). File size 6.5 MB [PDF](#)

**Snavey, Jacob.** [personal account book], 51 pages. **Note:** Selected pages. Posted March 13, 2000. [CD \(CWDA02\)](#). [SAMPLE PAGE](#). File size 3.8 MB [PDF](#)

**Uhler, Cyrus.** *Draught and Cording [weaving manuscript]*, ca 1830, 107 pages. **Note:** Landscape mode. Posted May 14, 2001. [CD \(CWDA02\)](#). [SAMPLE PAGE](#). File size 6.0 MB [PDF](#)

# Cellular Automata, Part 1

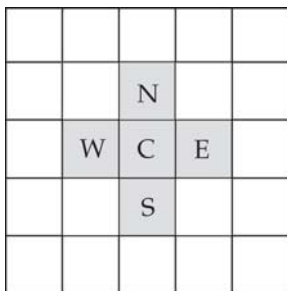
A cellular automaton is a mathematical “machine” for generating patterns. There are many kinds of cellular automata. The ones relevant here consist of rectangular arrays of cells. A cell may be black or white. The arrangement of colors is called a pattern. An example is shown at the right.



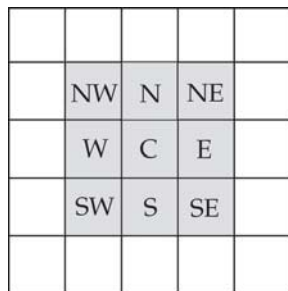
A cellular automaton starts with some pattern and then runs in a sequence of steps, producing other patterns. At each step, each cell may change color according to a *transition rule*. The same transition rule applies to all cells. One possible rule is to change white cells to black cells and vice versa, as shown at the left. At the next step the patterns changes to the one shown in the first paragraph. After that, the two patterns alternate.



There are many possible transition rules, but they depend only on the immediate *neighborhood* of a cell. Two commonly used neighborhoods are:



**5-neighborhood**



**9 neighborhood**

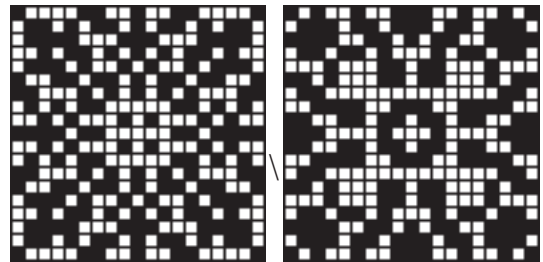
The cell itself, which is considered to be part of the neighborhood, is labeled C. The rest of the cells in a neighborhood are labeled by compass points relative to C.

Not all cells need to figure into a transition rule. For the color-reversal example above, only C is considered and the rule can be stated as: If C is

white, change it to black but if it is black change it to white.

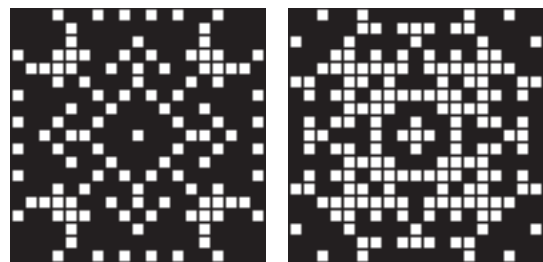
One rule that produces interesting patterns is the parity rule: If the number of white cells in the neighborhood is odd, change the cell to white; otherwise, change it to black.

The parity rule with the 5-neighborhood, applied to the first pattern in this article, produces this sequence of patterns:



1

2



3

4

...

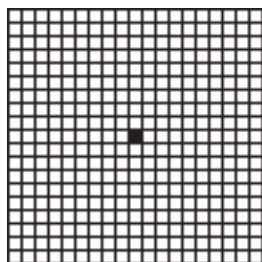
The important features of cellular automata are:

- parallelism (all cells change at once)
- homogeneity (same rule applies to all cells)
- locality (transitions depend on nearby cells)
- iteration (rules are applied repeatedly)

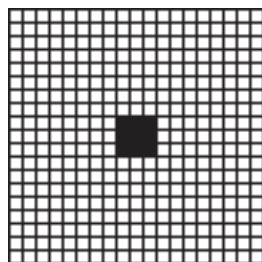
These properties are known to create complexity from simplicity and figure strongly in theories of physical and biological evolution.

An example is the “1-of-8” rules for the 9-neighborhood: If exactly one cell surrounding the cell itself is black, change the cell to black, else to white. Starting with a single black cell in the center of an otherwise white pattern, the results are:

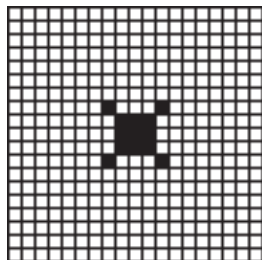




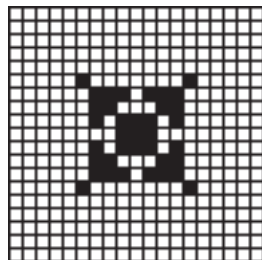
0



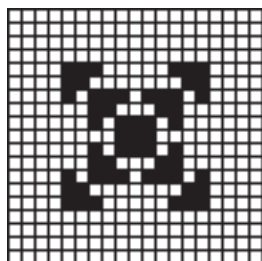
1



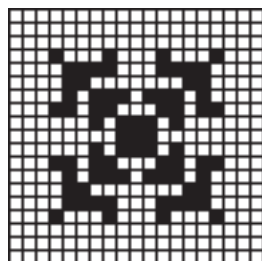
2



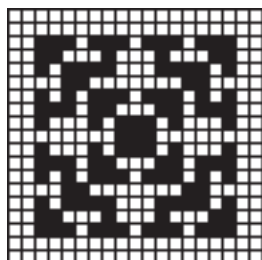
3



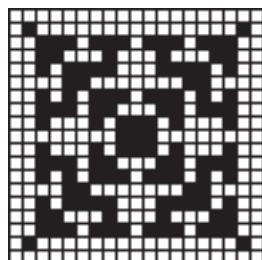
4



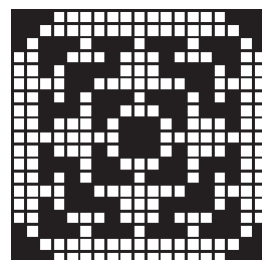
5



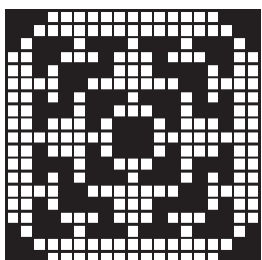
6



7



8



9

As indicated by patterns 8 and 9, from this point on, the pattern remains the same.

These are fractal patterns that come from almost nothing. Larger patterns produce larger and more intricate patterns.

So what does this all have to do with the fancy twills shown in the masthead graphic? The first pattern is a drawdown of a fancy twill. Using this as the starting pattern for the 5-neighborhood with the parity rule, the others and many more follow.

The 761 drafts in the *Fancy Twill Variations* collection on

<http://www.Handweaving.net>

were produced in this fashion.

In the next article on cellular automata, the use of cellular automata to generate patterns (drawdowns) for weaving will be explored in more detail.

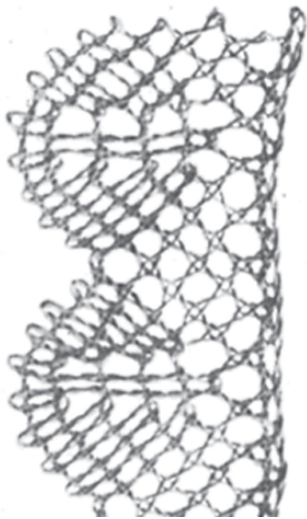
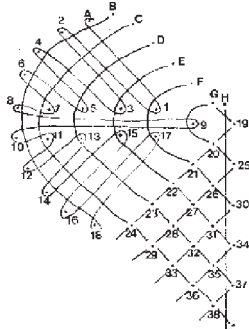
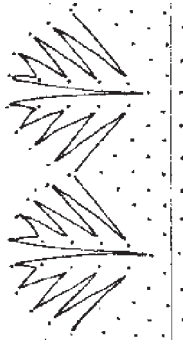


## Bobbin Lace — Pricking, Thread, Pins

This is the third and last of the articles on the tools of bobbin lace. Having described pillows (*Webside 8*) and bobbins (*Webside 9*), the final articles needed to begin making lace are the pricking, the thread, and the pins.

The pricking is the pattern. The lace design is drawn onto a piece of card stock using indelible ink, and then it is pricked. The design for a piece of lace is set out in dots showing where each pin must be placed, and each dot is pricked ahead of time to save the lacemaker's fingers. Pricking ahead of time also helps to find the pinholes when the light isn't good: one can gently draw the pin over the card and it will sink into the hole. The design is the exact size of the lace to be made. (Sometimes the lace is very fine and the pinholes are very close together, so the lacemaker has an enlarged copy of the pricking nearby to refer to for tricky details.) The pricking is pinned to the pillow (see *Webside 8*) and the work is done over it.

Here are a pricking, a diagram to refer to, and the finished lace sample:



Thread: the size of the thread is determined by the distance apart of the pinholes in the pricking. The most common threads used are linen, cotton, and silk, but almost any others can also be used, especially in contemporary work. In the days when lace was generally made to trim clothes, thread was most often white, but nowadays the sky's the limit and colors are bright and vivid. Thread for lacemaking is more tightly spun than ordinary thread, and it is smooth and strong.



It can be bought from the many suppliers who handle lacemakers' needs. Some very successful laces are made with wire, and there are several specialists who teach the skills needed for this unusual material.

Pins: Descriptions of lacemaking in encyclopedias and such will often give a very distorted picture of the use of pins. The reason the pins are necessary is to hold the thread when it has to change direction or to keep a crossing in place. Some lace is made with pins only on the outside edges, but this requires ingenious manipulation of the threads to keep

the tensions secure.

Each pin sits in its hole, and as the work progresses the pins are pushed down to get out of the way of work in progress. The size of the pins is directly related to the size of the thread used. There are some very fine, short pins used in the most delicate work, but for general use pins found at the notions counter are just fine. If one were to work in very heavy thread, the pins would of course be correspondingly thick and long. One lacemaker did a design using rope: in this case she hammered nails into a board! In the end, the lace had to be put in place with a crane.



To review: bobbin lace is made over a pricking, on a pillow with a bobbin attached to each thread, and the threads are guided by the position of the pins which hold them in place.



## Girl Guides Lacemaker Badge

An interesting topic for discussion came up recently on [Arachne.com](http://Arachne.com), the lacemakers' website. Someone remarked that Girl Guides been discontinued some time in the 1970s when women began to work out of the house and handwork was no longer in vogue.

One of the correspondents found an old manual with the requirements for the badge for Girl Guides in England in 1968. It makes one think what the children of today are missing:

### LACE-MAKER (Lace) BADGE

1 Name and describe four different kinds of lace, e.g. torchon, Irish crochet, Brussels point, filet, ground point, Carrickmacross, Milanese, etc.

2 Mend, very neatly, a piece of real or imitation lace.

3 Pass one of the following clauses:

(a) Bobbin or pillow lace: Manage at least thirty-six bobbins; make five different stitches; show specimens to include insertion and edging.

(b) Needlepoint lace: Make eight varieties of stitch, to include bars, picots, tulle.

(c) Filet or darned net lace: Make your own net and vary the design. Show insertion or several squares.

(d) Tambour lace: Know the tambour stitch. Work in several colours; or show a piece of "needle run" with at least eight varieties of stitch in the net.

(e) Applique on net: e.g., Carrickmacross, applique duchesse, etc. Show a piece of work including lawn or sprigs.

4 Pass one of the following clauses:

(a) Tatting lace: Know single- and double-thread tatting, both for insertion and lace, manage three threads at a time on separate shuttles.

(b) Knitted lace: Copy a simple design, or follow directions, showing edging and insertion.

(c) Crochet: Copy a simple design, or follow directions, showing insertion, edging, corner, and Irish rosettes.

(d) Netting lace: Work two doilies with varying widths of mesh and different designs, such as shell or pointed edges.

## Lace News and Notes

### Websites

Lacemakers have charts which help them decide which threads to choose for various sizes of pricking, but it is always best to make a small samples ahead of time to see if the thread is right.

And like weavers, they often use the technique of wrapping thread to compare sizes. A good website for choosing threads and making wraps is:

<http://paternoster.orpheusweb.co.uk/lace/threadsize/threadsize.html>

For instructions and suggestions for making lace with wire:

<http://members.aol.com/Lacemania/wireintroduction.htm>

There are many good sites for beginners. Here is one of them:

<http://www.xs4all.nl/~falkink/lace/diktes-EN.html>

And of course the best site for all kinds of information about lace is:

<http://lace.lacefairy.com/>

### Lace Meetings

Dates for upcoming international gatherings in 2006:

The 2006 Lace Guild Convention, Durham, England: 7th-9th April, 2006

Deutscher Klöppelverband e.V. (German Bobbin Lace Association) 24th Congress in Borken/Westphalia, Germany: April 21-23, 2006

OIDFA 12th World Lace Congress in Athens, Greece: 26th - 28th May 2006

2006 IOLI Convention in Montreal, Quebec, Canada: 23-29 July 2006



## Double Weave Sampler

Margaret Coe

Continuing on the double weave theme from *Webside 09*, here's a design showing that, with a relatively simple two-block double weave, 4 colors of yarn, and an 8-shaft loom, we can obtain many variations of color combinations.

For this sample, based on one by Paul O'Connor published in his article in *Weaver's 17*, I selected 4 distinct colors, warping each block in alternating bands. Block A is threaded on shafts 1-4, and Block B on shafts 5-8. The color sequence changes at each block change, and the blocks vary in width as indicated.

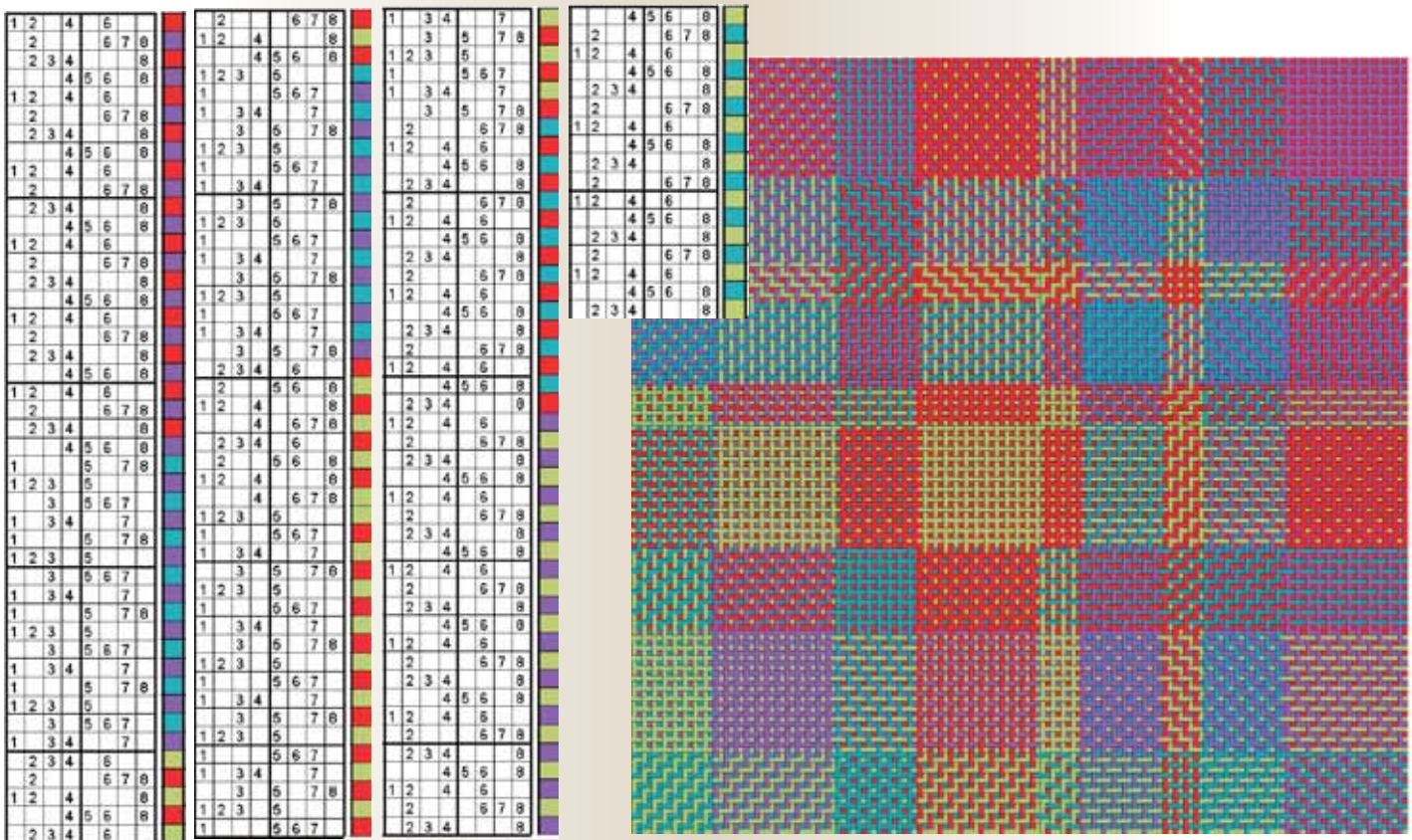
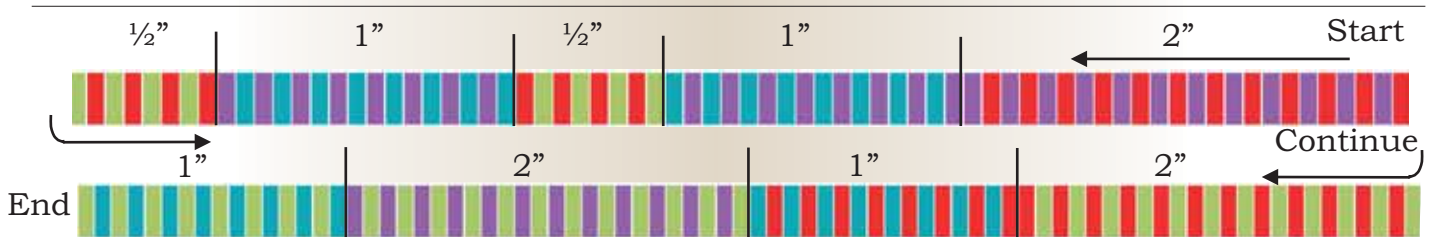
A tie up requires more treadles than most looms

possess, therefore a peg plan is provided which is to be read from the top of the left column down. Peg plans are used for weaving on a dobby loom and also when using a table loom. For a treadle loom, with a bit of ingenuity, a skeleton tie up may be devised; alternatively a direct tie can be utilized for part, if not all, of the hanging.

Weave in either 5/2 or 10/2 cotton with suggested setts of:

- 5/2 12 epi per layer (24 epi in the reed)
- 10/2 24 epi per layer (48 epi in the reed)

The sampler can also be mounted as a wall hanging.



## CD List

The following CDs containing weaving and lace material are available. Shipping charges are extra.



**Coe Productions**  
email@coeproduced.com

**A Twill of Your Choice; the CD, Paul R. O'Connor and Margaret Coe \$19.95**



**Complex Weavers**  
marjie@maine.rr.com

**Historic Weaving Archive, Volumes 1-5 \$15 each**



<http://www.handweaving.net/Store.aspx>

**Historic Weaving Archive, Volumes 6-12 \$15 each**

**Thomas Ashenhurst Drafts and Weaving Books \$30**

**Ralph E. Griswold Drafts \$20**

**Morath, Posselt, Petzold, ICS Drafts and Weaving Material \$25**

**Donat Large Book of Textile Designs Drafts and Original Book \$39.95 (sale price)**

**Oelsner, Fressinet, Wood / Pennington Drafts and Weaving Material \$25 (sale price)**

**Needle and Bobbin Club Bulletins and Articles \$15**



**Tess Parrish**  
Tess1929@aol.com

**Historic Lace Archive, Volumes 1-4 \$10 each**