

## SUGGESTIONS ON THE USE OF LINENS IN HAND WEAVING

Courtesy of Gallinger Crafts, Hartland, Michigan  
Looms, Weaving Supplies, Instructions and Threads

Linen is one of the most beautiful of the materials used in handweaving, but may give trouble if handled in the manner of cotton or wool. If handled correctly it gives no more trouble than any other yarn.

Linen yarns fall into two general classes — "round" linens, and "singles" or "line" linens. There are also linen "floss" yarns, which though plied and twisted like round linen are not twisted as hard as the 40/2 and 40/3 round linens customarily used in hand-weaving.

Linen has no elasticity when dry, and for this reason a linen warp should be kept damp during weaving. This applies both to round linens and singles. The warp may be dampened with a sponge or soft cloth as the work progresses, and when the loom is left idle for several hours or overnight it is well to fold a wet bath towel around the warp-beam and over the stretched part of the warp. It is also very important to release the tension on the warp when the loom is not in use.

A singles linen warp should not only be woven damp, but for best results it should also be treated with a warp-dressing that prevents fuzzing in the reed. A simple and effective dressing may be made in the following manner: boil flax-seed in water and strain off the resulting solution. Exact proportions are unimportant. If the solution is very thick dilute it down to the consistency of thin starch by adding water. The warp should be soaked in this solution and permitted to become almost dry before beaming. If this is impractical, the dressing may be applied to the warp during beaming, or even applied to a warp already on the loom.

Care must be taken, however, to use a warp-linen for warp. A singles warp-linen is spun of longer fibres and is much stronger than weft-linen. Warp-linen may be used for weft, but weft-linen should not be used for warp, as it will prove refractory even with a thorough dressing and sufficient dampness. A good warp-linen, treated as described above, will give no more trouble than a cotton warp.

Linens sometimes look stringy and disappointing when on the loom. All linen pieces require a thorough soaking and vigorous washing to bring out the lustre and texture of the fabric, and to give it a finish. Soak new linens for several hours or overnight, then rub out in warm soap-suds, rinse, wring and iron. Begin ironing while the fabric is still very damp, and iron dry, — passing over and over the fabric with the iron. Linens become more beautiful with repeated washings, so this first washing should be very thorough — even severe. The difference it makes in the texture and appearance of the fabric is truly amazing.

Patterns and weaves used for weaving in linen should be carefully considered with respect to the qualities of the material. The over-shot weave is undesirable, as linen threads do not cling together and the skips sag and form loops. The best weaves for linen are damash, double-faced twill, the Bronson or "spot" weave, "huck", "Ms and Os" and the variations of twill and "Bird-Eye."

ANCIENT METHODS OF WARPING

In ancient times men did not know how to make long warps. They attached the short warp threads directly to the two opposite poles that made up their looms. When man first invented a loom with a back beam upon which many yards of cloth could be wound, and with a front beam for holding the finished cloth, a great advance in weaving was made. Looms with back beams make possible the making of continuous cloth for clothes and household conveniences, such as curtains, bedspreads, rugs, etc.

MODERN METHODS OF WARPING

It took some ingenuity to devise a method of preparing many yards of warp threads in a continuous length to be wound around the back beam of a loom preparatory to weaving. The first method of accomplishing this was to drive pegs into the ground and walk around them, carrying the threads along. Today we have an upright warping board with convenient pegs around which we wind our warps. A modern warping board enables us to do two things:

1. Measure off a long warp of a definite number of yards.
2. Keep one's threads in order by means of laying them alternately under and over two pegs, forming a cross.

A MODERN WARPING BOARD

The warping board shown consists of a right part, A, placed opposite a left part, B, and a board with screw eyes, C, placed above them. These parts are of heavy wood and A and B are fitted with smooth pegs 5" long. Parts A and B are also adjustable and may be set one, two or more yards apart, making possible short or long warps, and also a warp of a definite yardage. A convenient distance between the two parts is two yards. Place them so that Pegs No. 4 and No. 11 are just two yards apart, and you will be able to warp 12 yards.

To adjust the parts, screw them securely to the wall. Above them at the right, or better still, on a wall at right angles to them, fasten the board, C. This is provided with hooks at the back to slip over two nails.

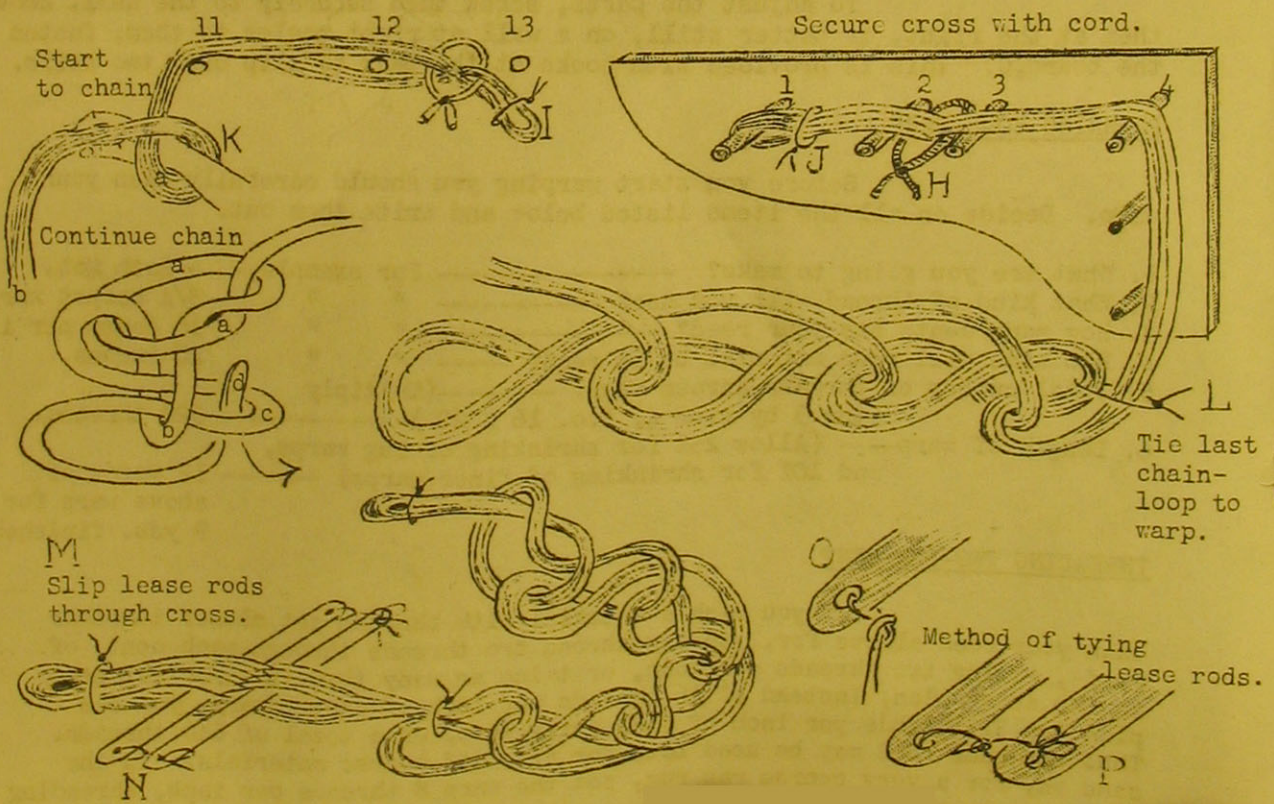
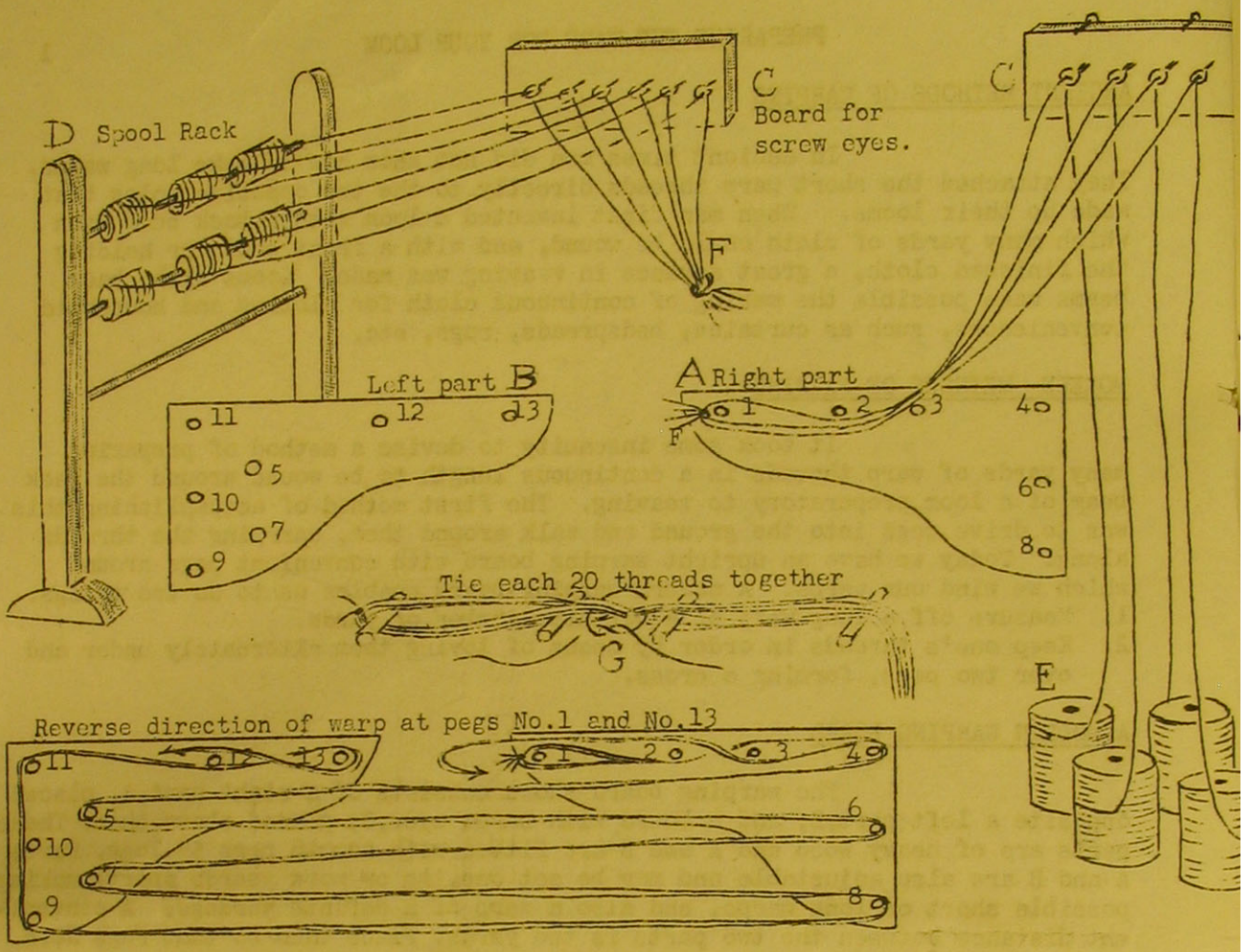
PLANNING YOUR WARP

Before you start warping you should carefully plan your warp. Decide on all the items listed below and write them out.

1. What are you going to make? ----- For example, - A Bath Mat.
2. What kind of thread will you use? ----- " " 8/4 carpet warp.
3. How many dents has your reed? ----- " " 16 dents per in.
4. How wide will your material be in reed? ----- " " 20 inches.
5. Total number of threads across warp. ----- (Multiply  
item 3 by item 4, i.e. 16 X 20) ----- 320 threads.
6. Length of warp ---- (Allow 25% for shrinking of rug warps,  
and 10% for shrinking of finer warps) ----- 12 yards of  
above warp for  
9 yds. finished.

THREADING TWO-PER-DENT

If you wish a material with threads set closer together than your reed allows for, you may thread two threads through each dent of reed, giving two threads per dent, or twice as many threads. For instance, in the above plan, instead of 16 threads per inch of carpet warp, you can plan for 32 threads per inch of fine doily warp, or a total of 640 threads. Thus the same reed may be used both for fine and coarse materials. In the same way for a very coarse rag rug, set the warp 8 threads per inch, threading it in every other dent of the reed.



### WINDING WARP

To save time, wind from 4 to 10 threads at a time; but do not warp more than 4 until you have had some experience. Place spools on a rack, D, or set them on the floor, as at E. Draw each thread from its spool and thread through a separate screw-eye. Then place ends together and knot them in an overhand knot, as at F. Slip knot over Peg No.1, then draw the threads together under Peg No.2, then over 3, over and around 4, across frame, over and around 5, around 6, around 7, around 8, around 9, upward and over 10 and 11, under 12, over 13. At last peg reverse and go under 13, over 12 in returning. Otherwise follow same track up to Pegs 2 and 3 where you now pass under 3 and over 2, then around 1, as shown by arrow. Eight threads have now been warped. Repeat this procedure from 1 to 13, then back again, always passing under 2 and over 3 on downward trip, but under 3 and over 2 on backward trip; also under 12 and over 13 on downward trip, but under 13 and over 12 when coming back. By this alternation you form a cross between the groups of threads so that they cannot get tangled. Repeat until you have desired number of threads. There are several points in warping that will help you to make a good job of it:

1. To help you in counting more easily, tie every group of 20 or 24 threads together before proceeding further. To do this pass a thread through the openings made at Pegs 2 and 3, tie the ends in a half knot, as shown at G; let them hang until next group of 20 or 24 have been added. Tie these, etc.
2. Never piece threads in the middle of the warp, for the knots will cause a tearing of the threads when they pass through the reed on the loom. When a thread gives out, tie a new thread to it either at first peg, 1, or last peg, 13.
3. At the end of your warp, if the threads do not come out according to count, add one or two extra instead of an entire group of four.
4. While warping, keep pushing the threads close up against preceding threads to prevent their slipping off pegs. You may even slightly overlap them. Also try to finish your warping at one time, as the threads stretch when left long.

### SECURING CROSSES

By crossing the groups of 4 threads alternately under and over the pegs every group of 4 has been kept entirely separate from the next group. This will help you in threading the loom, and you must therefore keep the cross formed between pegs 2 and 3 quite carefully. This cross has already been kept in groups of 20 threads; now slip a colored yarn through all the sections, bringing the ends out toward the front, and tying them together, as at H. Also run a cord through openings at 12 and 13. Also tie cord around loops of ends, close to 1 and 13, as at I and J.

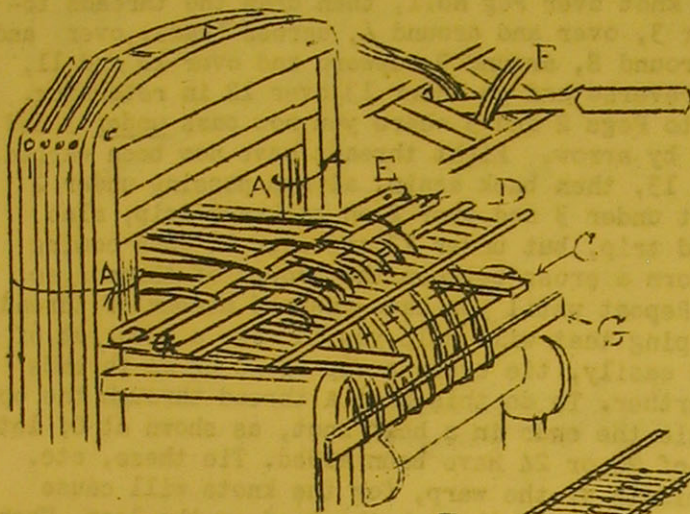
### TAKING OFF WARP

The end pegs, 1 and 13, of your warping board should be removable. Slip warp ends carefully off peg 13, and start chain while removing warp from other pegs, as at K. Loop warp over hand, pull long part, b, down through first loop, a; now put hand through loop c and pull it down through second loop, b; then pull d through c, etc., continuing chaining thus all along warp from peg to peg. Tie last chain-loop to warp just below starting pegs, as at L. Slip warp carefully off first pegs.

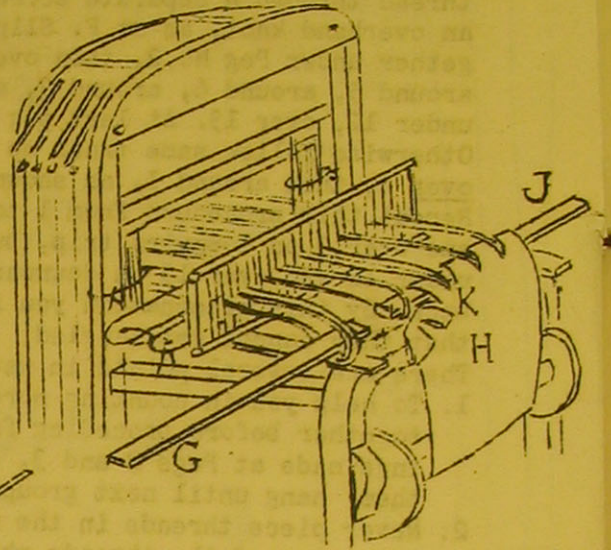
### PUTTING IN LEASE STICKS

In place formerly taken by pegs 2 and 3, insert the two smooth lease rods that came with your loom, as at M. Tie their ends together, as at N. Take a cord 1 ft. long, insert one end through a hole of rod, as at O, tie both ends in an overhand knot, as at P. Insert one end through hole of other stick, and tie ends in a bow, as at Q. This is a professional method of keeping the warp from slipping off your sticks. When it is desired to remove them, simply untie the bow and leave knotted part hanging on first stick. Then slip sticks out of warp.

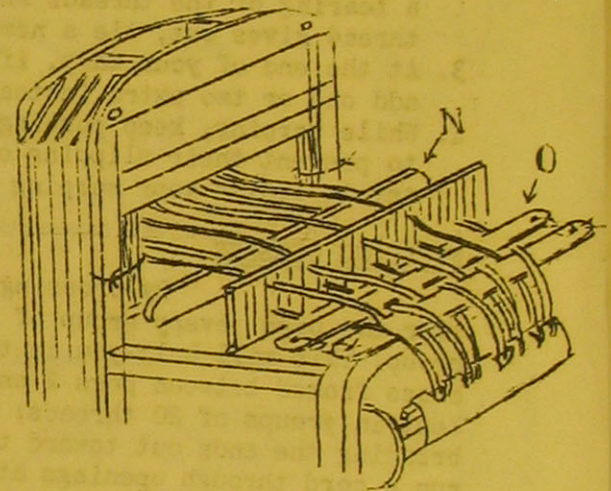
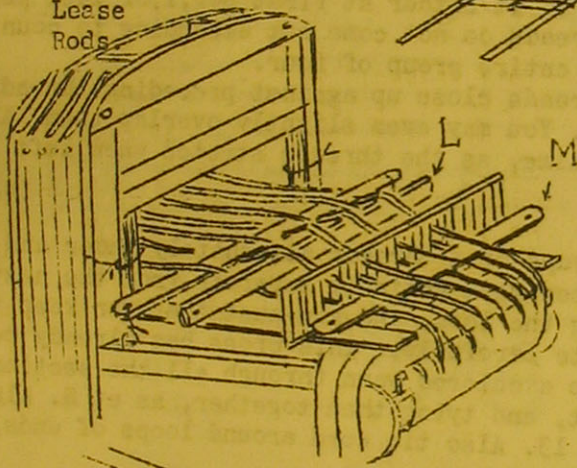
Step I. Spreading Groups Of Thread Through Feed.



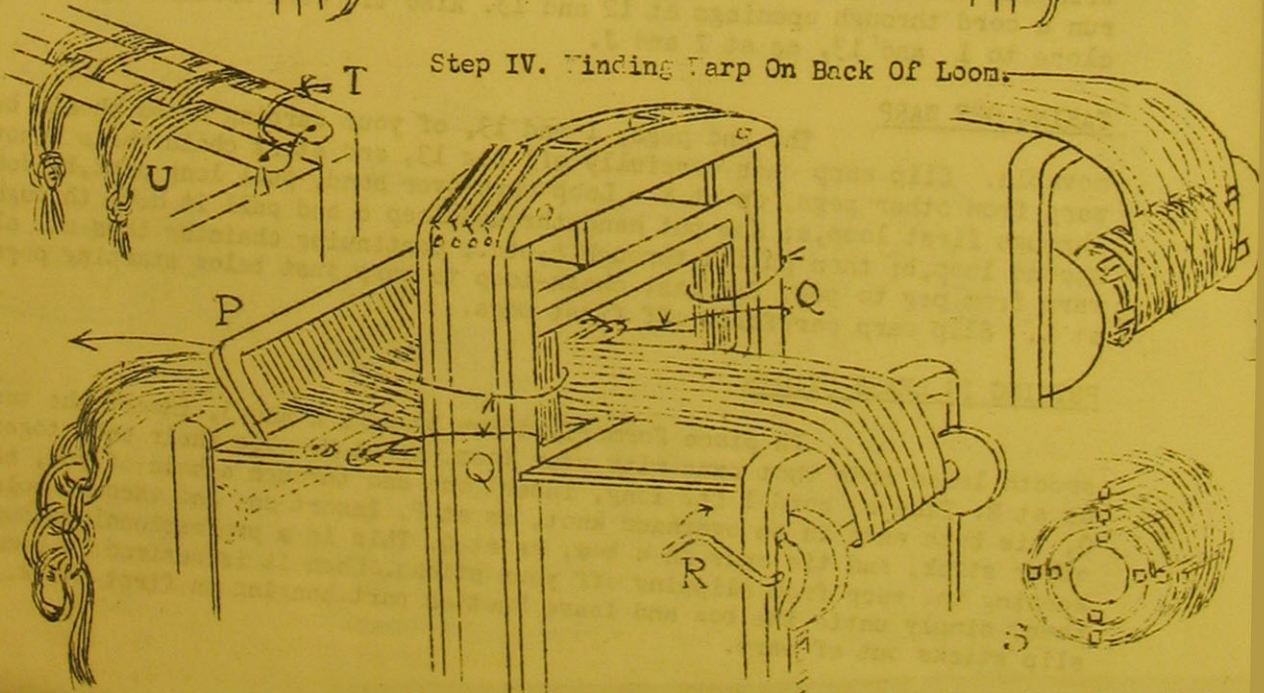
Step II. Slipping Loops On Apron Rod.



Step III. Transferring Lease Rods



Step IV. Winding Warp On Back Of Loom.



## BEAMING THE WARP

It may seem at first sight that getting a warp on a loom is a complicated task; but it is very simple if followed step by step, and is excellent training in coordination. The detailed drawings given here show the processes in picture form, making the method not only simple but interesting.

STEP I: SPREADING GROUPS OF THREAD THROUGH REED. After taking your warp off the pegs, the next step is to transfer it to the loom, spreading it out evenly along the back roller so that it will wind up smoothly. We use the reed to space the groups, not actually threading the threads, but laying out the groups evenly. The width of the spread-out warp should equal that of the material to be woven. To make it do so, allow enough reed spaces for each group to take care of its threads. For instance for groups of 4 threads to be threaded 1 per dent, thread a group through a dent, skip 3 (this makes 4 altogether), put next group into a dent, skip 3, etc.

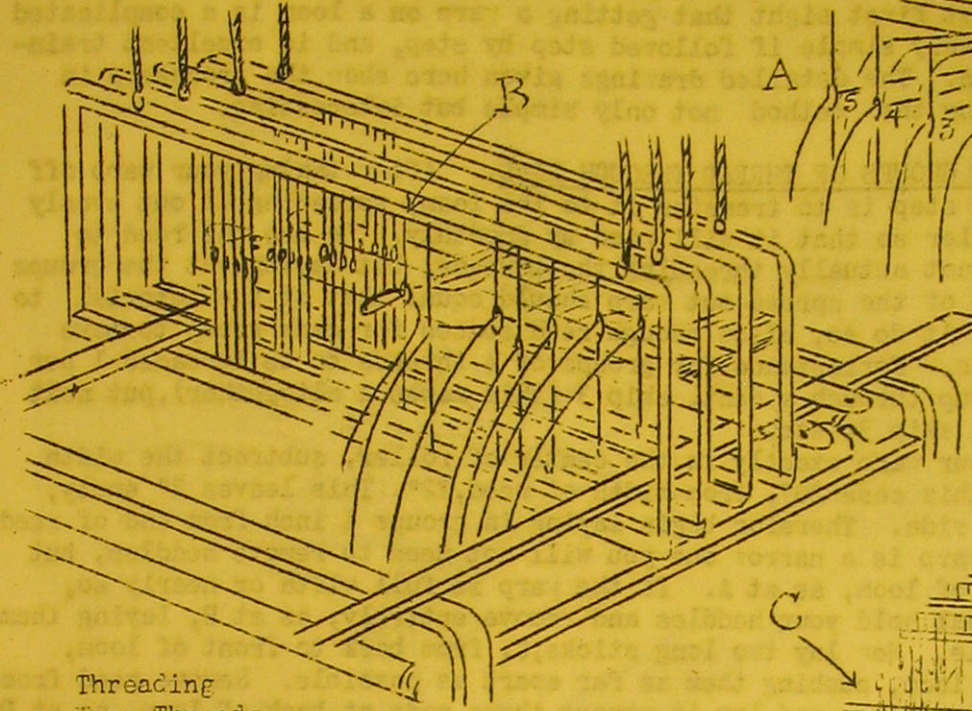
To get your warp exactly in the center of roller, subtract the width of your warp, in this case 20", from width of reed, 22". This leaves 2" empty, or 1 inch at each side. Therefore begin laying in groups 1 inch from end of reed.

If your warp is a narrow one you will not need to remove heddles, but tie them to sides of loom, as at A. If the warp is full width or nearly so, spring the rods that hold your heddles and remove entirely, as at B, laying them out flat on a table. Now lay two long sticks, C, from back to front of loom, through center of loom, pushing them as far apart as possible. Remove reed from its frame at front of loom and lay it across these rods at back of loom, as at D. Now carefully lay the chain of warp through center of loom with lease sticks close to reed, as at E. Starting at 1 inch from end of reed, push down first group of 4 threads, as at F. The ends of the groups are in the form of loops. To prevent their twisting slip the loops over a stick, G. Skip 3 dents in between the groups, and push them down into reed all the way across.

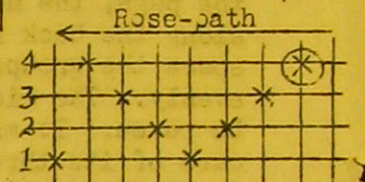
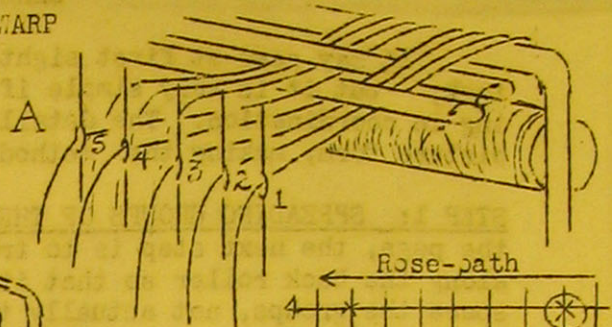
STEP II. SLIPPING LOOPS ON APRON ROD. At the back of your loom is an apron, H, cut into loops or tabs along one edge. Our next step is to transfer the loops of warp to a stick passing through these tabs. To do this we slip the loops off stick G, to another stick that passes between the tabs, J. Start with new stick, J, and insert it at right side of apron through one tab; then slip the warp loops coming opposite first slit of apron, from stick G to stick J; slip J through next apron loop, slip more loops on, as at K, etc., until all are transferred. The tabs are cut about 1 inch apart, so you will slip off 16 threads or 8 loops at each slit.

STEP III. TRANSFERRING LEASE RODS TO OTHER SIDE OF REED. The final position of lease rods is close to apron at back of loom. Since they are now at the front of the reed, we must transfer them to the other side of it. To do this, first untie lease rods, then turn the lease rod nearest the reed up on edge, as at L, and slip a stick, M, into opening thus made on other side of reed. Then remove L. Turn other lease rod on edge, as at N, and slip a rod into opening thus made on other side of reed, as at O. Then remove N. Replace extra sticks with lease rods. Pull reed and lease rods back through center of loom to front, P, place reed in its frame and tie lease rods to center side posts to prevent their slipping when warp is pulled through them, see Q.

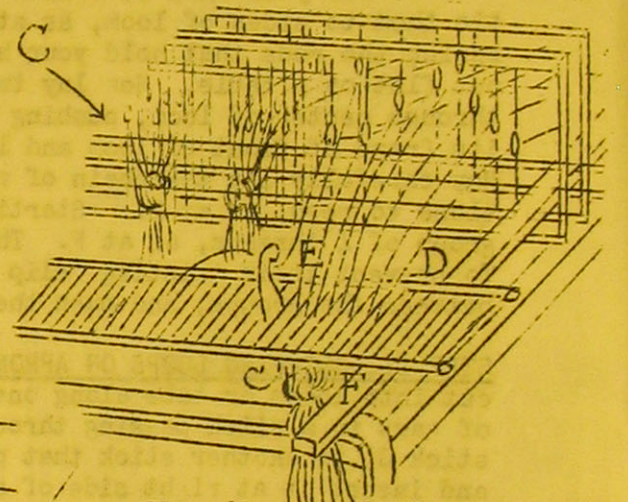
STEP IV. WINDING WARP ON BACK OF LOOM. In winding warp around back roller, one person should stand at the front of the loom, pulling the warp out, as at arrow, and another person should stand at the back keeping the groups evenly spaced across the beam, and cranking up the roller in the direction shown at R. As the person at the front unloosens the chain, more warp opens out for him to straighten. Jerk on this warp gently to free any tangles, and strike the warp sharply with the palm of the hand. Then hold all threads at the same tension while it is wound on back roller. After several yards have been wound, insert warp sticks at even intervals, as at S, and after each few yards, insert other sticks just above these. When warp is all on back roller, pull threads out of reed, and tie them in groups close to lease rods, as at U. Tie lease rod at back to back beam, as at T.



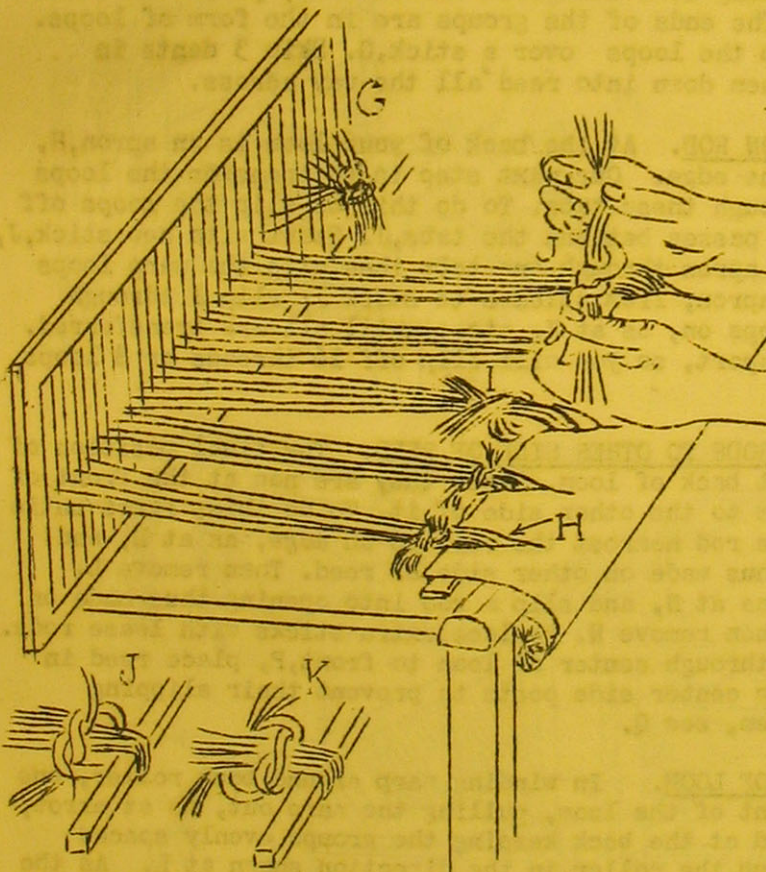
Threading Warp Threads



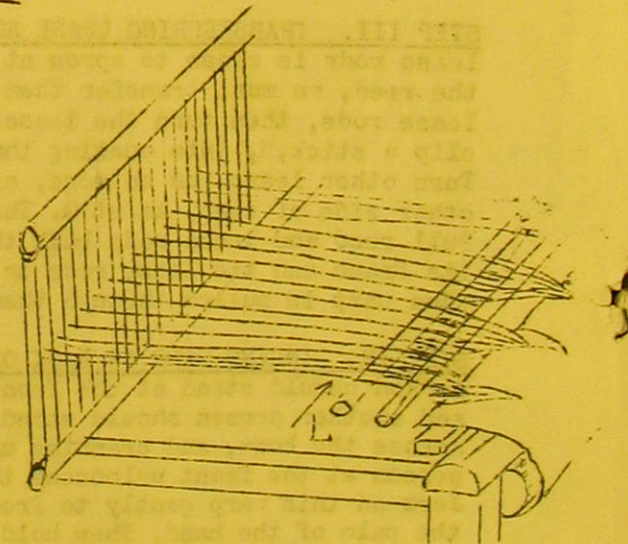
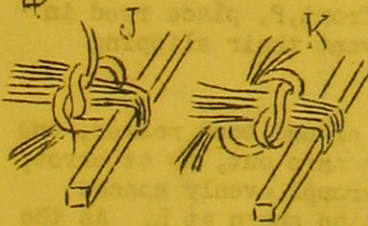
Read from the pattern. Progress from right to left, starting with first thread in circle.



Threading or Sleying Warp Through the Reed.



Tying Down the Warp Threads



Starting the Weaving.

Note: Patterns for threading are available at .05 plus postage.

THREADING WARP THREADS Your threads are now on the back beam, coming forward under and over the lease rods in groups, as at A. They are now ready to be threaded. See that the threads lie flat along the back beam and lease rods; then take them one by one as they come, and as you see them numbered here, 1,2,3,4,5,etc. Keep the unused needles or heddles in groups at the left side of the harnesses, as shown here, and bring each needle toward the right as needed, slipping it out of its group, threading, and then shoving along toward the right. A needle or heddle is shown at B, having just been brought from the left side and to the place of threading. It will then be moved toward the right. Note the manner of threading, using a loop of thread rather than its end. When from 10 to 20 threads have been threaded, (it is wise to keep a strict count, and to check back over pattern for accuracy), tie the group into a knot, as shown at C, and let hang until ready for sleying through reed. If one repeat of the pattern has a fairly small number of threads, tie off a group at the end of each repeat.

READING FROM PATTERN. At the top right of Page 6 is shown one repeat of a sample pattern, the Rose-Path. This is read as follows for the purpose of threading: Each cross represents a thread to be put through a needle or heddle. The heddles are on the harnesses which are numbered from front to back, -1,2,3,4. In reading the Pattern, read from right to left, and also thread the loom starting at the right and working toward the left. You will see that the first cross is on harness 4, which means that the first thread must be threaded through a heddle on harness 4. Therefor bring a heddle on harness 4 out from the left, put the first thread through, slip over toward the right. The next thread goes through a heddle on harness 3. Bring a needle over from 3rd harness, thread, slip to the right. Continue threading as shown by each cross, on harness 2,1, 2,3,4 and 1, following the pattern. When finished with this first repeat of pattern, tie this group of threads into a loose knot. Start next repeat of pattern in same way, and continue all across warp.

THREADING OR SLEYING THROUGH REED. To find out how far material should start from edge, subtract width of material as planned from width of reed. In this case bathmat planned is 20" wide, which subtracted from reed width leaves 2" or 1" at each side. Start sleying ( putting threads through reed) 1" from end, as shown at D. The best method of sleying is to insert small wooden curled hook into each next opening, then loop next thread under end of hook, as shown at E. Again tie each group of 10 to 20 threads under the reed, as shown at F.

TYING DOWN THE WARP THREADS. Slip reed into the center of the reed frame, thus making it stand upright, as at G. Push beater back against harnesses while tying, using care that all threads are tied so that they will not slip through. Untie first group of threads, out of this group take a number that will slip into the notch of apron, shown at H. Push threads down through notch and over the rod. Divide into two parts and bring up around the group, as at I. Tie into a square knot, first part shown at J, second part should be under the threads, as shown at K. Tying in this way under the threads gets the ends out of the way. In tying down a warp, it is a good idea to start at each side, tying down a group at furthest left, then one at furthest right, then one at the center. From then on it is an easy matter to space the groups so that they will come evenly and directly forward into the notches of the apron.

STARTING THE WEAVING. By inserting a round rod or piece of heavy weaving material through the first shed, and also through the alternate shed, the warp threads are more quickly pulled together. Two pieces of 1/4" or 3/8" dowels are excellent for this purpose. First make a tabby shed, harnesses 1 and 3, slipping first rod through; then make other tabby shed, 2 and 4, slipping second rod through. You are now ready to continue weaving with regular thread, as at L.